Annotated checklist of Japanese water mites (Acari: Prostigmata: Hydracarina)

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Abstract — This paper contains an annotated checklist of the 223 species and 41 subspecies classified in seven superfamilies, 29 families, 42 subfamilies and 62 genera recorded from Japan. The information on scientific name, Japanese name, synonym, type locality, and domestic distribution is given for each species and subspecies. The Japanese name for every taxonomic name is given due to its common use in Japan. Taxonomic remarks are noted as needed.

Key words — Acari, checklist, Hydracarina, Japan, synonymy, type locality, water mites

Introduction

Water mite groups are fully aquatic, although several have adapted to temporary immersion in aquatic habitats. Water mites belong to the cohort Parasitengona in the suborder Prostigmata. This group has a parasitic larval stage in which they attach to other animals, such as aquatic insects, and predatory post-larval stages. Water mites are taxonomically referred to as Hydracarina, Hydrachnellae, Hydrachnidia, and Hydrachnida. Although numerous species of Oribatida, Astigmata, and Mesostigmata occupy aquatic habitats, the Hydracarina are the most abundant in every known freshwater habitat. Currently, more than 5,000 species of Hydracarina have been described worldwide (Smith & Cook 1991).

In Japan, water mite research was started by Kenkichi Kishinouye (1889). He concisely introduced the morphology and behavior of water mites belonging to the genus Atax (=Unionicola) recovered from a pond snail. Yamada (1918) concisely described the larva of Hydrodroma sp. from Niigata Prefecture. Hydryphantes uchidai is the first water mite species described in Japan by Kyukichi Kishida (1921). Thereafter, he introduced the morphological features of several Japanese water mites in an agricultural newspaper (Kishida 1954, 1956a, 1956b, 1956c, 1957a, 1957b, 1958, 1959, 1960). Enami (1940) recorded several rheophilous water mites from the Izu Pninsura. In an ecological study of Japanese water mites, Masuda (1934a, 1934b, 1935a, 1935b, 1936, 1937, 1942) reported the life history of some lentic water mite species found in Osaka and its environs. Miyazaki (1933, 1935, 1936, 1939, 1945, 1947) researched the parasitic behavior and life history of water mites in the Kyushu district from the viewpoint of medical science. Kadota & Kokubo (1960) researched water mite phenology and reported seasonal change in individual numbers of Piona (Piona) carnea in a pond in a

mountainous area of central Japan.

Japanese and foreign researchers have studied Japanese water mites. Hevers (1984) made a revision of the *Unionicola* species in Japan. A Russian researcher recently made a faunal study of water mites in Lake Biwa and described several new species (Tuzovskij 2003a, 2003b, 2003c).

Tohru Uchida and Taiji Imamura have made major contributions to the study of Japanese water mites. They have been leaders in the taxonomy of Japanese water mites since the beginning of the 20th Century. Dr. Uchida made brilliant achievements in taxonomy, ecology, and the life cycles of water mites in Japan from 1922 to 1953. In addition to his studies of Japanese water mites, Uchida conducted faunal research on water mites in Asia, which included Taiwan (Uchida 1927), Sakhalin (Uchida 1934a, 1936a), the Kurils (Uchida 1936b), and Manchuria (Uchida 1940b, 1941). On the other hand, Dr. Imamura conducted taxonomic studies of Japanese water mites in addition to studying the life cycles of several lentic species since 1938. He conducted illuminating studies on the taxonomy of subterranean water mites (Imamura 1956b, 1957a, 1957b, 1958a, 1959c, 1961a, 1979a). He recorded more than 70 subterranean species including many endemic species from well and cave waters in Japan.

This paper contains an annotated checklist of the 223 species and 41 subspecies classified in seven superfamilies, 29 families, 42 subfamilies, and 62 genera recorded from Japan. Previously published records of Japanese water mites are entirely collated, and most of the references to the species and subspecies are from the studies of Drs. Uchida and Imamura. In the current classification of mites, eight superfamilies are sometimes applicable to so-called water mites (Walter & Proctor 1999): Hydrachnoidea, Eylaoidea, Hydryphantoidea, Lebertioidea, Hygrobatoidea, Arrenuroidea, Hydrovolzioidea, and Stygothrombidioiea. The

superfamily Stygothrombidioidea, however, is not regarded as a water mite *sensu stricto* in the present study.

In the arrangement of taxonomic names under Phalanx Hydracarina in the list, the seven superfamilies are arranged in a postulated phylogenetic sequence (Wittte 1991, Witte & Döring 1999, Witte & Olomski 1999): Hydrovolzioidea, Hydryphantoidea, Eylaoidea, Hydrachnoidea, Lebertioidea, Hygrobatoidea, and Arrenuroidea. The other lower taxa are arranged alphabetically by order, as are families within superfamilies, genera within families and species within genera. The valid taxonomic name follows Viets (1987). A detailed synonmy of each species should be referred to Viets (1956, 1987). A Japanese name is given to every scientific name for the convenience of common use in Japan. The former Japanese name is emended if it is liable to cause misunderstanding of the taxonomy. Several discriminatory terms in Japanese names have also been revised. A preferable Japanese name is selected in cases in which several different Japanese names have been given to a single species. The type locality is noted by a regional name in sequence from smaller to larger area with the addition of a country name. The distribution is presented by prefecture, which is restricted to the current geographic divisions. Species recorded from formerly occupied territories, such as the Kurils and Manchuria, are excluded from the list. The information for each species appears in the following format: species name, Japanese name in brackets, synonym, type locality, distribution, and remarks (if applicable).

Taxonomy and distribution of water mites (Hydracarina) in Japan

Superfamily **Hydrovolzioidea** Thor 1905 [Hiyamizudani-jôka]

Family **Hydrovolziidae** Thor 1905 [Hiyamizudani-ka]

Subfamily **Hydrovolziinae** Thor 1905 [Hiyamizudani-aka]

Genus *Hydrovolzia* Thor 1905 [Hiyamizudani-zoku]

Hydrovolzia japonica Imamura 1961 [Hiyamizudani]

Hydrovolzia (Hydrovolzia) japonica Imamura 1961b, p. 57, figs.
1–2; Imamura1965c, p. 401; Imamura 1980, p. 331, fig. 153C.
Hydrovolzia japonica: Imamura 1965b, p. 230, fig. 11(15); Imamura 1986, p. 377, fig. 20(8).

Type locality. Okunikko Trout Hatchery, Okunikko, Tochigi, Japan.

Distribution. Tochigi.

Genus *Stygovolzia* Imamura 1957 [Chika-hiyamizudani-zoku]

Stygovolzia uenoi Imamura 1957 [Chika-hiyamizudani]

Stygovolzia uenoi Imamura 1957b, p. 49, figs. 1-3; Imamura 1959a, p. 64; Imamura 1965b, p. 224, fig. 11(9); Imamura 1965c, p. 401; Imamura 1977c, p. 18, fig. 2(2); Imamura 1979a, p.157; Imamura 1980, p. 331, fig. 153D; Imamura 1986, p. 377, fig. 20(8).

Type locality. Miyazaki, Shimogamo, Kyoto, Japan. *Distribution*. Kyoto.

Superfamily **Hydryphantoidea** Piersig 1896 [Akamizudani-jôka]

Family **Hydrodromidae** Viets 1936 [Hasami-mizudani-ka]

Subfamily **Hydrodrominae** Viets 1936 [Hasami-mizudani-aka]

Genus *Hydrodroma* Koch 1837 [Hasami-mizudani-zoku]

Hydrodroma despiciens despiciens (Müller 1776) [Hasami-mizudani]

Hydrachna despiciens Müller 1776, p. 190.

Diplodontus despiciens: Uchida 1932, p. 144.

Hydrodroma despiciens: Imamura 1952d, p. 155, fig. 4;

Imamura 1952a, p. 191; Imamura 1953d, p. 262; Imamura 1954b, p. 36, fig. 21; Imamura 1965b, p. 227, fig. 11(12, 22); Imamura 1965c, p. 403.

Hydrodroma despiciens despiciens: Viets 1956, p. 148; Imamura 1980, p. 337, fig. 156D; Imamura 1986, p. 381.

Type locality. Denmark.

Distribution. Hokkaido, Hyogo, Fukuoka.

Family **Hydryphantidae** Piersig 1896 [Akamizudani-ka]

Subfamily **Hydryphantinae** Piersig 1896 [Akamizudani-aka]

Genus *Hydryphantes* Koch 1841 [Akamizudani-zoku]

Hydryphantes (Hydryphantes) affinis Sokolow 1931 [Usu-akamizudani (new name)]

Hydryphantes affinis Sokolow 1931, p. 478, figs. 27–34; Imamura 1965b, p. 235, fig. 11(21); Imamura 1986, p. 383, fig. 20(11).

Hydryphantes (Hydryphantes) affinis: Uchida 1937, p. 18;

Uchida 1938, p. 1; Uchida 1939, p. 450. *Type locality*. Lake Hanka, Ussuri, Russia. *Distribution*. Tokyo, Osaka, Kumamoto.

Hydryphantes (Hydryphantes) placationis Thon 1899 [Hira-akamizudani (new name)]

Hydryphantes placationis Thon 1899a, p. 101. Hydryphantes (Hydryphantes) placationis: Uchida 1939, p. 450.

Type locality. Podebrady, Bohemia, Czech Rep. Distribution. Osaka.

Hydryphantes (Hydryphantes) ruber ruber (Geer 1778) [Benimizudani (new name)]

Acarus (aquaticus ruber) [sic] Geer 1778, p. 141, figs. 3–6. *Hydryphantes (Hydryphantes) ruber ruber*: Imamura 1954b, p. 23, figs. 12–13.

Type locality. Sweden. Distribution. Hokkaido.

Hydryphantes (Polyhydryphantes) flexuosus (Koenike 1885) [Akamizudani]

Hydrodroma flexuosa Koenike 1885, p. 222.

Hydryphantes (Polyhydryphantes) flexuosus: Imamura 1954b, p. 26, figs. 14–16; Imamura 1965c, p. 403; Imamura 1980, p. 333, fig. 154D.

Hydryphantes flexuosus: Imamura 1965b, p. 222, fig. 11(7, 9).Type locality. Jaderberg, Germany.Distribution. Hokkaido.

Hydryphantes (Polyhydryphantes) uchidai Kishida 1921 [Uchida-mamizudani]

Hydryphantes uchidai Kishida 1921, p. 210, figs. 1–5.
Hydryphantes uchidai (?) [sic]: Masuda 1935a, p. 412, figs. 1–9.
Hydryphantes (Polyhydryphantes) uchidai: Uchida 1937, p. 18;
Uchida 1938, p. 1; Uchida 1939, p. 450.

Type locality. Mejiro, Tokyo, Japan.

Distribution. Tokyo, Osaka, Kumamoto.

Remarks. Imamura (1965c) noted that this species should be synonymized with *H. (P.) flexuosus*.

Subfamily **Wandesiinae** Schwoerbel 1961 [Nagabosodani-aka]

Genus *Wandesia* Schechtel 1912 [Nagabosodani-zoku]

Wandesia (Allowandesia) japonica Imamura 1956 [Nagabosodani]

Wandesia japonica Imamura 1956b, p. 195, fig. 2 (male);

Imamura 1957a, p. 352; Imamura 1959a, p. 64; Imamura 1965b, p. 224, fig. 11(9); Imamura 1986, p. 380, fig. 20(10); Kishida 1958, p. 8, figs.

Wandesia (Allowandesia) japonica: Schwoerbel 1961, p. 346; Imamura 1977c, p. 20, fig. 2(3); Imamura 1979a, p. 157; Imamura 1980, p. 337, fig. 156C.

Type locality. Aioi, Hyogo, Japan.

Distribution. Hyogo.

Remarks. The descripton and the figure of the larva in Imamura (1956b) are equivalent to those of the larva of Stygothrombium japonicum Imamura 1956 (Mullen & Vercammen-Grandjean 1980).

Family **Thyasidae** Viets 1926 [Izumidani-ka]

Subfamily **Thyasinae** Viets 1926 [Izumidani-aka]

Genus *Cyclothyas* Lundblad 1941 [Ogumadani-zoku]

Cyclothyas heterospina (Imamura 1955) [Ogumadani]

Ogumacarus heterospinus Imamura 1955, p. 182, fig. 1; Imamura 1965b, p. 234; Imamura1986, p. 380.

Cyclothyas heterospina: Cook 1974, p. 91, figs. 242, 244–245, 247.

Type locality. Rakuju-en, Mishima, Shizuoka, Japan. Distribution. Shizuoka.

Genus *Japonothyas* Imamura & Mitchel 1967 [Kazari-izumidani-zoku]

Japonothyas ornatus Imamura & Mitchell 1967 [Kazari-izumidani]

Japonothyas ornatus Imamura & Mitchell 1967a, p. 171, figs. 1–2; Imamura 1980, p. 335, fig. 155B.

Type locality. Daiya River, Nikko, Tochigi, Japan. Distribution. Tochigi.

Genus *Panisopsis* Viets 1926 [Hiramizudani-zoku (revised name)]

Panisopsis (Panisopsis) gorhami (Habeeb 1954) [Ezo-hiramizudani (new name)]

Acadiothyas gorhami Habeeb 1954, p. 2, figs. 10–12. *Thyas ezoensis* Imamura 1954b, p. 34, fig. 20.

Panisopsis gorhami: Imamura 1960, p. 234, fig. 20; Imamura 1965b, p. 234, fig. 11(20).

Panisopsis (Panisopsis) gorhami: Cook 1974, p. 70, figs. 149–150, 152–154.

Type locality. New Brunswick, Canada.

Distribution. Hokkaido.

Panisopsis (Panisoides) orientalis Imamura & Mitchell 1967

[Higashi-hiramizudani (new name)]

Panisopsis (Panisoides) orientalis Imamura & Mitchell 1967a, p. 174, fig. 3.

Type locality. Daiya River, Nikko, Tochigi, Japan. Distribution. Tochigi.

Genus *Thyas* Koch 1836 [Izumidani-zoku]

Thyas barbigera barbigera Viets 1908 [Izumidani]

Thyas barbigera Viets 1908, p. 670, figs. 1–2; Imamura 1954b, p. 29, figs. 17–19; Imamura 1965b, p. 223, fig. 11(8); Imamura 1965c, p. 402.

Hydryphantes sp.: Imamura 1951b, p. 34, figs. 1-2.

Thyas barbigera barbigera: Viets 1956, p. 115; Imamura 1980, p. 335, fig. 155C; Imamura 1986, p. 380.

Type locality. Giessen, Germany.

Distribution. Hokkaido.

Genus *Trichothyas* Viets 1926 [Onsendani-zoku]

Trichothyas (Lundbladia) japonica (Uchida & Imamura 1953) [Onsendani]

Lundbladia japonica Uchida & Imamura 1953a, p. 515, fig. 1. Trichothyas (Lundbladia) japonica: Viets 1956, p. 121; Imamura 1965b, p. 233; Imamura 1965c, p. 403; Imamura 1980, p. 335, fig. 155A; Imamura 1986, p. 380.

Type locality. Tsubame Onsen, Niigata, Japan. Distribution. Niigata.

Superfamily **Eylaoidea** Leach 1815 [Meganedani-jôka]

Family **Eylaidae** Leach 1815 [Meganedani-ka]

Subfamily **Eylainae** Leach 1815 [Meganedani-aka]

Genus *Eylais* Latreille 1796 [Meganedani-zoku]

Eylais setosa japonica Imamura 1953 [Toge-meganedani (new name)]

Eylais setosa japonica Imamura 1953c, p. 413, fig. 1; Imamura

1965b, p. 232, fig. 11(18). *Type locality*. Shimohaguri, Gifu, Japan. *Distribution*. Gifu.

Eylais takingyo Masuda 1935 [Masuda-meganedani]

Eylais sp. [Eylais takingyo] Masuda 1935b, p. 44, figs. 1–9. Eylais takingyo: Uchida 1939, p. 450; Imamura 1952d, p. 153, fig. 3; Imamura 1965c, p. 402; Imamura 1980, p. 333, fig. 154C; Imamura 1986, p. 379, fig. 20(9).

Type locality. Toyono, Osaka, Japan.

Distribution. Osaka, Saga.

Remarks. Masuda (1935) is considered as the original description of this species. Masuda (1935) described this species under the name of Eylais sp. and he referred to the name Eylais takingyo as a prospective species name for Eylais sp. However, Masuda has not properly described this species. Imamura (1952d) re-described this species under the name of Eylais takingyo Masuda. Eylais takingyo is a currently used scientific name in mite taxonomy.

Family **Limnocharidae** Grube 1859 [Ônumadani-ka]

Subfamily **Limnocharinae** Grube 1859 [Ônumadani-aka]

Genus *Limnochares* Latreille 1796 [Ônumadani-zoku]

Limnochares (Cyclothrix) crinita Koenike 1898 [Ônumadani]

Limnochares crinita Koenike 1898, p. 301, 313, figs. 23–29. Limnochares (Cyclothrix) crinita: Konike 1910, p. 135. Limnochares aquatica: Imamura 1952b, p. 227, figs. 1–12; Imamura 1965b, p. 222, fig. 11(7, 8, 17); Imamura 1986, p. 380.

Limnochares (Limnochares) aquatica: Imamura 1954b, p. 7, figs. 2–4; Imamura 1980, p. 333, fig. 154B.

Type locality. Nosy Be, Madagascar. Distribution. Hokkaido.

Family **Protoziidae** Koenike 1909 [Hyôtandani-ka]

Subfamily **Protziinae** Koenike 1909 [Hyôtandani-aka]

Genus *Partnunia* Piersig 1896 [Uchida-hyôtandani-zoku]

Partnunia uchidai Imamura 1950 [Uchida-hyôtandani] Partnunia uchidai Imamura 1950a, p. 33, figs. 1–7; Imamura 1950d, p. 54, figs. 1–9; Imamura 1954b, p. 22, fig. 11; Imamura 1965b, p. 227, fig. 11(12); Imamura 1965c, p. 402; Imamura 1980, p. 335, fig. 155D; Imamura 1986, p. 380.
Type locality. Kamikoshi, Hokkaido, Japan.
Distribution. Hokkaido.

Genus *Protzia* Piersig 1896 [Hyôtandani-zoku]

Protzia (Calonyx) hadai (Imamura 1953) [Hada-hyôtandani]

Calonyx hadai Imamura 1953b, p. 196, fig. 2; Imamura 1953c, p. 414.

Protzia hadai: Newell 1959, p. 1095.

Protzia (Calonyx) hadai: Imamura 1980, p. 337.

Type locality. Sandankyo, Hiroshima, Japan.

Distribution. Gifu, Hiroshima.

Protzia (Calonyx) japonica Uchida 1934 [Ôhyôtandani]

Protzia japonica Uchida 1934b, p. 73, figs. 5-7.

Calonyx japonicus: Enami 1940, p. 204, figs. 2–5; Imamura 1952a, p. 191; Imamura 1954b, p. 18, figs. 9–10; Imamura 1965b, p. 227, fig. 11 (12); Imamura 1965c, p. 402.

Protzia (Calonyx) japonica: Imamura 1980, p. 337, fig. 156B.

Type locality. Sounkyo, Hokkaido, Japan.

Distribution. Hokkaido

Remarks. Imamura (1954b) noted that this species described by Enami (1940) probably belonged to other species.

Protzia (Protzia) caucasica Sokolow 1927 [Ajia-hyôtandani]

Protzia caucasica Sokolow 1927, p. 47, plate1: fig. 1, plate 2: figs. 2–4; Uchida 1934b, p. 70, figs. 3–4; Imamura 1954b, p. 12, figs. 5–6; Imamura 1955, p. 182.

Protzia (Protzia) caucasica: Lundblad 1956, p. 36.

Type locality. Caucasus, Russia. Distribution. Hokkaido, Shizuoka.

Protzia (Protzia) eximia (Protz 1896) [Togari-hyôtandani]

Thyas eximia Protz 1896, p. 25, figs. 5-7.

Protzia eximia var.: Uchida 1934b, p. 68, figs. 1-2.

Protzia eximia: Imamura 1954b, p. 15, figs. 7–8; Imamura 1965b, p. 233, fig. 11 (19); Imamura 1986, p. 379, fig. 20 (9).
Protzia (Protzia) eximia: Lundblad 1956, p. 35; Imamura 1980, p. 337, fig. 156A.

Type locality. Berlin, Germany.

Distribution. Hokkaido.

Superfamily **Hydrachnoidea** Leach 1815 [Ômizudani-jôka]

Family **Hydrachnidae** Leach 1815 [Ômizudani-ka]

Subfamily **Hydrachninae** Leach 1815 [Ômizudani-aka]

Genus *Hydrachna* Müller 1776 [Ômizudani-zoku]

Hydrachna (Anohydrachna) miyazakii Uchida 1937 [Miyazaki-ômizudani (new name)]

Hydrachna (Anohydrachna) miyazakii Uchida 1937, p. 10, figs. 1-2.

Type locality. Yatsushiro, Kumamoto, Japan.

Distribution. Kumamoto.

Hydrachna (Diplohydrachna) globosa globosa (Geer 1778) [Marumizudani]

Acarus (aquaticus globosus) [sic] Geer 1778, p. 146, fig. 7. *Hydrachna (Monohydrachna) tokyoensis* Kishida 1927, p. 978, figs. 1–2.

Hydrachna (Schizohydrachna) uniscutata var. *lita* Uchida 1937, p. 15, fig. 7; Imamura 1953c, p. 413.

Hydrachna (Schizohydrachna) uniscutata var. minuta Uchida 1937, p. 15, fig. 6.

Hydrachna (Schizohydrachna) uniscutata var. yatsushiro Uchida 1937, p. 13, figs. 3-5; Imamura 1952d, p. 150, fig. 1.

Hydrachna (Schizohydrachna) uniscutata tokyoensis: Uchida 1938, p. 1.

Hydrachna (Schizohydrachna) uniscutata yatsushiro: Uchida 1939, p. 450.

Hydrachna (Diplohydrachna) uniscutata var. lita: Imamura 1952d, p. 151, fig. 2; Imamura 1954b, p. 7.

Hydrachna (Diplohydrachna) globosa globosa: Viets 1956, p. 23.

Hydrachna uniscutata lita: Imamura 1965b, p. 230, fig. 11(16). Hydrachna (Diplohydrachna) uniscutata: Imamura 1965c, p. 401.

Hydrachna (Diplohydrachna) uniscutata lita: Imamura 1980, p. 333, fig. 154A.

Type locality. Sweden.

Distribution. Hokkaido, Tokyo, Gifu, Osaka, Saga, Kumamoto.

Hydrachna (Diplohydrachna) uniscutata fukuoka Uchida 1931

[Fukuoka-ômizudani]

Hydrachna (Schizohydrachna) fukuoka Uchida 1931b, p. 137, figs. 12-14.

Hydrachna (Schizohydrachna) uniscutata var. fukuoka Uchida 1937, p. 16.

Hydrachna (Diplohydrachna) uniscutata fukuoka: Viets 1956, p. 26.

Type locality. Fukuoka City, Fukuoka, Japan. Distribution. Fukuoka.

Hydrachna (Diplohydrachna) uniscutata paludosa Thon 1899

[Ike-ômizudani (new name)]

Hydrachna paludosa Thon 1899b, p. 498, fig. 2.

Hydrachna (Schizohydrachna) nova: Uchida 1931b, p. 134, figs. 6–8; Masuda 1934a, p. 33, figs. 1–5, plates 1–2; Uchida 1938, p. 1; Uchida 1939, p. 450.

Hydrachna (Diplohydrachna) uniscutata paludosa: Viets 1956, p. 26.

Type locality. Laun, Bohemia, Czech Rep. Distribution. Saitama, Tokyo, Gifu, Osaka.

Hydrachna (Hydrachna) trilobata Viets 1926 [Mitsuba-ômizudani (new name)]

Hydrachna (Schizohydrachna) trilobata Viets 1926, p. 373, figs. 5-7; Uchida 1939, p. 450.

Hydrachna (Schizohydrachna) china Uchida 1931b, p. 136, figs. 9–11.

Hydrachna (Diplohydrachna) trilobata: Imamura 1954b, p. 5, fig. 1.

Hydrachna (Hydrachna) trilobata: Viets 1956, p. 20.

Hydrachna trilobata: Imamura 1986, p. 379, fig. 20(9).

Type locality. Jharahi River, Siripur, Saran, Bihar, India. *Distribution*. Hokkaido, Osaka.

Superfamily **Lebertioidea** Thor 1900 [Aoidani-jôka]

Family **Anisitsiellidae** Koenike 1910 [Hirasedani-ka (revised name)]

Subfamily **Anisitsiellinae** Koenike 1910 [Hirasedani-aka (revised name)]

Genus *Bandakia* Thor 1913 [Bandadani-zoku]

Bandakia japonica Imamura 1965 [Bandadani]

Bandakia japonica Imamura 1965a, p. 5, fig. 1; Imamura 1980, p. 341, fig. 158B.

Type locality. Anataki, Tashirodani, Ise, Mie, Japan. Distribution. Mie.

Family **Lebertiidae** Thor 1900 [Aoidani-ka]

Subfamily **Lebertiinae** Thor 1900 [Aoidani-aka]

Genus *Lebertia* Neuman 1880 [Aoidani-zoku]

Lebertia (Lebertia) japonensis Tuzovskij 2003 [Nihon-aoidani (new name)]

Lebertia (Lebertia) japonensis Tuzovskij 2003a, p. 1428, figs. 3-4.

Type locality. Lake Biwa, Kita-komatsu, Shiga, Japan. Distribution. Shiga.

Lebertia (Lebertia) oxideus Tuzovskij 2003 [Togari-aoidani (new name)]

Lebertia (Lebertia) oxideus Tuzovskij 2003a, p. 1426, figs. 1-2.

Type locality. Lake Biwa, Kita-komatsu, Shiga, Japan. *Distribution.* Shiga.

Lebertia (Pilolebertia) leioderma Viets 1925 [Maru-aoidani]

Lebertia (Pilolebertia) leioderma Viets 1925, p. 532, figs. 52–54: Enami 1940, p. 210, figs. 6–8; Imamura 1953b, p. 206, fig. 8; Imamura 1954b, p. 59; Imamura 1965b, p. 237; Imamura 1965c, p. 404; Imamura 1980, p. 341, fig. 158D; Imamura 1986, p. 381.

Lebertia leioderma: Imamura 1964b, p. 9.

Type locality. Harz, Germany.

Distribution. Hokkaido, Nagano, Shizuoka, Hiroshima.

Lebertia (Pilolebertia) limnea Imamura 1954 [Numa-aoidani]

Lebertia (Pilolebertia) limnea Imamura 1954b, p. 59, figs. 35–36; Imamura 1980, p. 341, fig. 158C; Imamura 1986, p. 381. *Lebertia limnea*: Imamura 1965b, p. 224, fig. 11(9, 24).

Type locality. Nishitappu, Hokkaido, Japan. *Distribution*. Hokkaido.

Lebertia (Pseudolebertia) imamurai Viets 1956 [Kita-aoidani]

Lebertia (Septlebertia) brunnea: Imamura 1954b, p. 64, fig. 37. Lebertia (Pseudolebertia) imamurai Viets 1956, p. 207. Lebertia (Septlebertia) imamurai: Imamura 1980, p. 343, fig. 1504

Lebertia imamurai: Imamura 1986, p. 383, fig. 20(11). Type locality. Chitose, Hokkaido, Japan. Distribution. Hokkaido.

Family **Limnesiidae** Thor 1900 [Numadani-ka]

Subfamily **Kawamuracarinae** Viets 1943 [Kawamuradani-aka]

Genus *Kawamuracarus* Uchida 1937 [Kawamuradani-zoku]

Kawamuracarus elongatus Uchida 1937 [Kawamuradani]

Kawamuracarus elongatus Uchida 1937, p. 22, figs. 11–13; Uchida 1939, p. 450; Imamura 1957a, p. 355, fig. 4; Imamura 1959a, p. 64; Imamura 1965b, p. 239; Imamura 1965c, p. 405; Imamura 1977c, p. 23, fig. 2(6); Imamura 1979a, p. 158; Imamura 1980, p. 347, fig. 161B; Imamura 1986, p. 384. *Type locality*. Nagasaki City, Nagasaki, Japan. *Distribution*. Osaka, Hyogo, Fukuoka, Nagasaki.

Subfamily **Limnesiinae** Thor 1836 [Numadani-aka]

Genus *Limnesia* Koch 1836 [Numadani-zoku]

Limnesia (Limnesia) buruensis Viets 1923 [Buru-numadani (new name)]

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Limnesia buruensis Viets 1923, p. 190, figs. 2-4. Limnesia burensis [laps.]: Uchida 1931b, p. 131, figs. 2-4; Uchida 1939, p. 450.

Limnesia buruensis: Imamura 1952d, p. 156, fig. 5. Limnesia (Limnesia) buruensis: Viets 1956, p. 270.

Type locality. Buru Is., Moluccas, Indonesia. Distribution. Osaka, Saga.

Limnesia (Limnesia) isensis Imamura 1965 [Ise-numadani (new name)]

Limnesia (Limnesia) isensis Imamura 1965a, p. 7, fig. 2. Type locality. Kuraguchidani, Ise, Mie, Japan. Distribution. Mie.

Limnesia (Limnesia) koenikei asiatica Marshall 1928 [Ajia-numadani]

Limnesia koenikei asiatica Marshall 1928, p. 604, figs. 13–15; Imamura 1965b, p. 239, fig. 11(28).

Limnesia (Limnesia) koenikei var. asiatica: Imamura 1953c, p. 425, fig. 9.

Limnesia (Limnesia) koenikei asiatica: Viets 1956, p. 276.

Type locality. Suzhou, China.

Distribution. Gifu.

Remarks. Lundblad (1962) noted that L. (L.) koenikei asiatica described by Imamura (1953) should be referred to

L. (L.) koenikei koenikei Piersig 1894.

Limnesia (Limnesia) koenikei koenikei Piersig 1894 [Kenike-numadani]

Limnesia koenikei Piersig 1894, p. 115; Uchida 1931b, p. 130, fig.1; Uchida 1938, p. 2; Uchida 1939, p. 450; Imamura 1965b, p. 239; Imamura 1986, p. 384, fig. 20(12).

Limnesia (Limnesia) koenikei: Imamura 1954b, p. 70, figs. 40–42.

Limnesia (Limnesia) koenikei koenikei: Viets 1956, p. 275; Imamura 1980, p. 347, fig. 161D.

Type locality. Germany.

Distribution. Hokkaido, Tokyo, Osaka.

Limnesia (Limnesia) papillosa Viets 1935 [Ibo-numadani (new name)]

Limnesia papillosa Viets 1935, p. 610, fig. 49; Uchida 1937, p. 19, figs. 9-10.

Limnesia (Limnesia) papillosa: Viets 1956, p. 280.

Type locality. Java, Indonesia.

Distribution. Kumamoto.

Remarks. Viets (1987) noted that L. (L.) pallillosa described by Uchida (1937) was not L. (L.) papillosa Viets 1935.

Limnesia (Limnesia) polonica Schechtel 1910 [Poron-numadani (new name)]

Limnesia (Limnesia) polonica Schechtel 1910, p. 1, fig. 2. Limnesia (Limnesia) tuberifera Sokolow 1931, p. 486, figs. 45-

Limnesia tuberifera: Imamura 1952d, p. 157, fig. 6; Uchida 1938, p. 2.

Type locality. Poland.

Distribution. Tokyo, Fukuoka, Saga.

Limnesia (Limnesia) undulata undulata (Müller 1776) [Numadani]

Hydrachna undulata pro strigata [sic] Müller 1776, p. 280. Limnesia undulata: Uchida 1931b, p. 131; Uchida 1938, p. 2; Imamura 1965b, p. 239; Imamura 1986, p. 384.

Limnesia (Limnesia) undulata: Imamura 1953c, p. 427, fig. 10;Imamura 1953d, p. 262, fig. 1; Imamura 1954b, p. 74;Imamura 1954c, p. 151, fig. 2; Imamura 1965b, p. 405.

Limnesia (Limnesia) undulata undulata: Viets 1956, p. 283; Imamura 1980, p. 347, fig. 161C.

Type locality. Denmark.

Distribution. Hokkaido, Niigata, Tokyo, Gifu, Hyogo.

Subfamily **Stygolimnesiinae** Imamura 1979 [Chikanumadani-aka]

Genus *Stygolimnesia* Imamura 1979 [Chikanumadani-zoku]

Stygolimnesia japonica Imamura 1979 [Chikanumadani (new name)]

Stygolimnesia japonica Imamura 1979a, p. 160, figs. 1–2.

Type locality. Nishiki River, Kawaradani, Iwakuni, Yamaguchi, Japan.

Distribution. Yamaguchi.

Family **Oxidae** Viets 1926 [Maruharadani-ka]

Subfamily **Oxinae** Viets 1926 [Maruharadani-aka]

Genus *Oxus* Krammer 1877 [Maruharadani-zoku]

Oxus (Oxus) dahli Piersig 1903 [Maruharamizudani]

Oxus dahli Piersig 1903, p. 29, figs. 63-67; Imamura 1965b, p. 237, fig. 11(25).

Oxus (Oxus) dahli: Viets 1987, p. 585.

Type locality. Matupi, Bismark Arch., Papua New Guinea.

Distribution. Not specified.

Remarks. This species is tentatively recorded here as one of the Japanese water mites because there is no collecting record and morpholoigical description of this species in any scientific works in Japan. Imamura (1965b) only provided a figure of this species and noted that there were three *Oxus* species in Japan.

Oxus (Oxus) longisetus (Berlese 1885) [Togenaga-maruharadani]

Pseudomarica longiseta Berlese 1885, p. 10.

Oxus longisetus: Imamura 1954b, p. 66; Imamura 1954c, p. 149, fig. 1; Imamura 1980, p. 343, fig. 159B.

Oxus (Oxus) longisetus: Viets 1987, p. 586

Type locality. Italy.

Distribution. Hokkaido, Niigata.

Oxus (Oxus) magnus Sokolow 1934 [Ômaruharadani]

Oxus orientalis: Sokolow 1931, p. 484, figs. 39, 44, plate 9: fig. 12

Oxus magnus Sokolow 1934, p. 383; Imamura 1954b, p. 66, figs. 38–39; Imamura 1965c, p. 404; Imamura 1980, p. 343, fig. 159C.

Oxus (Oxus) magnus: Viets 1987, p. 586 Type locality. Sedimi, Ussuri, Russia. Distribution. Hokkaido.

Family **Sperchonidae** Thor 1900 [Nagaredani-ka]

Subfamily **Sperchoninae** Thor 1900 [Nagaredani-aka]

Genus *Sperchon* Kramer 1877 [Nagaredani-zoku]

Sperchon brevirostris brevirostris Koenike 1895 [Kita-nagaredani]

Sperchon brevirostris Koenike 1895a, p. 416, figs. 1–2; Imamura 1986, p. 382, fig. 20(10).

Sperchon (Sperchon) brevirostris: Imamura 1954b, p. 39, figs. 23–25.

Sperchon (Sperchon) brevirostris brevirostris: Imamura 1980, p. 339, fig. 157C.

Sperchon brevirostris brevirostris: Viets 1987, p. 687.

Type locality. Switzerland. Distribution. Hokkaido.

Sperchon denticulatus Koenike 1895 [Nokoba-nagaredani]

Sperchon denticulatus Koenike 1895a, p. 422, figs. 8–9; Imamura 1965b, p. 219, fig. 11 (2).

Sperchon (Hispidosperchon) denticulatus: Imamura 1955, p. 184, figs. 2-3.

Sperchon (Sperchon) denticulatus: Imamura 1980, p. 339, fig. 157B.

Type locality. Switzerland. Distribution. Shizuoka.

Sperchon ezoensis Imamura 1954 [Ezo-nagaredani (new name)]

Sperchon (Sperchon) ezoensis Imamura, 1954b, p. 43, figs. 26–28.

Sperchon ezoensis: Viets 1987, p. 692.

Type locality. Ishikari River, Sounkyo, Hokkaido, Japan. *Distribution*. Hokkaido.

Sperchon fluviatilis Uchida 1934 [Kawa-nagaredani (new name)]

Sperchon (Squamosperchon) fluviatilis Uchida, 1934b, p. 79, figs. 11–15.

Sperchon (Sperchon) fluviatilis: Imamura 1965c, p. 403.

Sperchon fluviatilis: Viets 1987, p. 693.

Type locality. Ishikari River, Sounkyo, Hokkaido, Japan. *Distribution*. Hokkaido.

Sperchon glandulosus glandulosus Koenike 1886 [Ônagaredani]

Sperchon glandulosus Koenike 1886, p. 279, figs. 17–24: Imamura 1952a, p. 191; Imamura 1965b, p. 227, fig. 11(12). Sperchon (Squamosperchon) glandulosus: Uchida 1934b, p. 76, figs. 8–10.

Sperchon glandulosus glandulosus: Viets 1987, p. 693.

Type locality. Isergebirge, Czech Rep.

Distribution. Hokkaido.

Sperchon nikkoensis Imamura 1976 [Miyama-nagaredani]

Sperchon (Palpisperchon) nikkoensis Imamura 1976, p. 279, fig. 1; Imamura 1980, p. 341, fig. 158A.

Sperchon nikkoensis: Viets 1987, p. 700.

Type locality. Onisawa, Shobugahama, Nikko, Tochigi, Japan.

Distribution. Tochigi.

Sperchon plumifer japonicus Imamura 1953 [Nippon-haneke-nagaredani (new name)]

Sperchon (Hispidosperchon) plumifer var. japonicus Imamura 1953c, p. 419, fig. 5.

Sperchon plumifer japonicus: Viets 1987, p. 702.

Type locality. Nagara River, Gifu City, Gifu, Japan. Distribution. Gifu.

Sperchon plumifer plumifer Thor 1902 [Haneke-nagaredani]

Sperchon (Hispidosperchon) plumifer Thor, 1902, p. 153, fig. 4; Uchida 1934b, p. 84, figs. 16⁻18; Imamura 1953b, p. 199, figs. 4-5; Imamura 1965c, p. 404.

Sperchon (Hispidosperchon) plumifer danubialis Szalay 1927, p. 71, 112, fig. 1(male); Imamura 1953c, p. 416, figs. 3–4.

Sperchon plumifer var.: Uchida 1937, p. 18.

Sperchon (Hispidosperchon) plumifer var. danubialis: Imamura 1954b, p. 52, fig. 31.

Sperchon (Hispidosperchon) plumifer plumifer: Imamura 1954b, p. 50, fig. 30.

Sperchon plumifer plumifer: Imamura 1964b, p. 9.

Sperchon plumifer: Imamura 1965b, p. 224, fig. 11(9).

Sperchon (Sperchon) plumifer plumifer: Imamura 1980, p. 339, fig. 157D.

Type locality. Laire River, Geneva, Switzerland. Distribution. Hokkaido, Nagano, Gifu, Kyoto, Hyogo, Hiroshima, Kumamoto.

Sperchon setiger setiger Thor 1898 [Fusa-nagaredani (new name)]

Sperchon setiger Thor 1898, p. 6; Imamura 1965b, p. 236, fig. 11(23).

Sperchon (Hispidosperchon) setiger: Imamura 1954b, p. 53, figs. 32–33

Sperchon setiger setiger: Viets 1987, p. 704.

Type locality. Norway.

Distribution. Hokkaido.

Remarks. This species described by Imamura (1954b) is regarded as that belonging to another species (Viets 1987).

Sperchon sounkyo Imamura 1954 [Asahi-nagaredani (new name)]

Sperchon (Sperchon) sounkyo Imamura 1954b, p. 48, fig. 29. Sperchon sounkyo: Viets 1987, p. 705.

Type locality. Ishikari River, Sounkyo, Hokkaido, Japan. *Distribution*. Hokkaido.

Sperchon spinosus Imamura 1954 [Toge-nagaredani (new name)]

Sperchon (Mixosperchon?) spinosus [sic] Imamura 1954b, p. 57, fig. 34.

Sperchon spinosus: Viets 1987, p. 705.

Type locality. Ishikari River, Sounkyo, Hokkaido, Japan. *Distribution*. Hokkaido.

Sperchon uchidai Imamura 1953 [Uchida-nagaredani (new name)]

Sperchon (Hispidosperchon) uchidai Imamura 1953b, p. 204, fig. 7.

Sperchon uchidai: Viets 1987, p. 708.

Type locality. Shinjo, Yamagata, Hiroshima, Japan. Distribution. Hiroshima.

Sperchon violaceus Walter 1944

[Sumire-nagaredani (new name)]

Sperchon (Hispidosperchon) violaceus Walter 1944, p. 296, figs. 28–34.

Sperchon (Hispidosperchon) violaceus var.: Imamura 1953b, p. 202, fig. 6.

Sperchon violaceus: Lundblad 1956, p. 79.

Type locality. Ybbs, Austria. Distribution. Hiroshima.

Sperchon yamagatensis Imamura & Nagatsuka 1983 [Yamagata-nagaredani (new name)]

Sperchon (Hispidosperchon) yamagatensis Imamura & Nagatsuka 1983, p. 227, fig. 1.

Type locality. Nikko River, Yawata, Akumi, Yamagata, Japan.

Distribution. Yamagata.

Genus *Sperchonopsis* Piersig 1896 [Oninagaredani-zoku]

Sperchonopsis nipponica (Uchida 1934) [Nippon-oninagaredani]

Pseudosperchon nipponicus Uchida 1934b, p. 88, figs. 21–24; Imamura 1952a, p. 191.

Sperchonopsis nipponica: Viets 1956, p. 177.

Type locality. Sounkyo, Hokkaido, Japan.

Distribution. Hokkaido.

Sperchonopsis verrucosa uchidai Viets 1955 [Uchida-oninagaredani (new name)]

Pseudosperchon verrucosus var.: Ucida 1934b, p. 87, figs. 19-

Sperchonopsis verrucosa uchidai Viets 1955, p. 256. Type locality. Kako River, Hyogo, Japan.

Distribution. Hyogo.

Sperchonopsis verrucosa verrucosa (Protz 1896) [Oninagaredani]

Sperchon verrucosus Protz 1896, p. 23, figs. 1–4.
Sperchonopsis verrucosa: Imamura 1953c, p. 414, fig. 2;
Imamura 1954b, p. 37, fig. 22; Imamura 1955, p. 184;
Imamura 1965b, p. 224, fig. 11(9); Imamura 1965c, p. 404.
Sperchonopsis verrucosa verrucosa: Viets 1956, p. 177;
Imamura 1980, p. 339, fig. 157A.

Type locality. Berlin, Germany. Distribution. Hokkaido, Shizuoka, Gifu, Hyogo.

Family **Torrenticolidae** Piersig 1902 [Keiryûdani-ka]

Subfamily **Testudacarinae** Cook 1974 [Kamedani-aka (new name)]

Genus *Testudacarus* Walter 1928 [Kamedani-zoku (new name)]

Testudacarus japonicus Imamura 1955 [Yoroi-kamedani (revised name)]

Testudacarus japonicus Imamura 1955, p. 186, fig. 4; Imamura 1965b, p. 238; Imamura 1986, p. 381.

Type locality. Takekura, Mishima, Shizuoka, Japan. Distribution. Shizuoka.

Testudacarus okadai Imamura 1976 [Okada-kamedani]

Testudacarus okadai Imamura 1976, p. 281, figs. 2-3; Imamura 1980, p. 343, fig. 159D.

Type locality. Onisawa, Shobugahama, Nikko, Tochigi,

Japan.

Distribution. Tochigi.

Distribution. Gifu.

Subfamily **Torrenticolinae** Piersig 1902 [Keiryûdani-aka]

Genus *Torrenticola* Piersig 1896 [Keiryûdani-zoku]

Torrenticola (Monatractides) gifuensis Imamura 1953 [Gifu-keiryûdani]

Torrenticola (Torrenticola) gifuensis Imamura 1953c, p. 422, fig. 7.

Torrenticola gifuensis: Imamura 1965b, p. 238, fig. 11(26). Torrenticola (Monatractides) gifuensis: Viets 1987, p. 775. Type locality. Kayu River, Takada, Gunjo, Gifu, Japan.

Torrenticola (Monatractides) orientalis Viets 1956 [Ajia-keiryûdani]

Atractides (Atractides) stadleri: Enami 1940, p. 216, figs. 11–14. Torrenticola (Torrenticola) orientalis Viets 1956, p. 250. Torrenticola (Monatractides) orientalis: Viets 1987, p. 780. Type locality. Inozawa River, Ochiai, Shizuoka, Japan. Distribution. Shizuoka.

Torrenticola (Torrenticola) amplexa amplexa (Koenike 1908) [Ôkeiryûdani (new name)]

Atractides amplexus Koenike 1908, p. 231, fig. 18.
Atractides (Rusetria) amplexus: Uchida 1938, p. 2.
Torrenticola (Rusetria) amplexa: Besseling 1954, p. 247.
Torrenticola (Torrenticola) amplexa: Lundblad 1956, p. 164.
Torrenticola (Torrenticola) amplexa amplexa: Viets 1987, p. 753.

Type locality. Bremen, Germany. Distribution. Tokyo.

Torrenticola (Torrenticola) brevirostris brevirostris (Halbert 1911) [Keiryûdani]

Atractides brevirostris Halbert 1911, p. 16, 19, fig. 13.

Torrenticola (Torrenticola) brevirostris: Imamura 1953c, p. 420, fig. 6; Imamura 1965c, p. 405.

Torrenticola (Torrenticola) brevirostris brevirostris: Viets 1956, p. 239; Imamura 1980, p. 345, fig. 160C.

Type locality. Ireland. Distribution. Ibaraki, Gifu.

Torrenticola (Torrenticola) elliptica elliptica Maglio 1909 [Seseragidani]

Torrenticola elliptica Maglio 1909, p. 291, figs. 23–26; Imamura 1986, p. 385, fig. 20(12).

Atractides (Atractides) ellipticus: Enami 1940, p. 213, figs. 9–10.

Torrenticola (Torrenticola) elliptica: Imamura 1953b, p. 207, fig. 9; Imamura 1953c, p. 422; Imamura 1955, p. 186; Imamura 1980, p. 345, fig. 160A.

Torrenticola (Torrenticola) elliptica elliptica: Viets 1987, p. 760.

Type locality. Italy.

Distribution. Shizuoka, Gifu, Hiroshima.

Torrenticola (Torrenticola) japonica Imamura 1953 [Maru-keiryûdani]

Torrenticola (Torrenticola) japonica Imamura 1953b, p. 209, fig. 10; Imamura 1980, p. 345, fig. 160B.

Type locality. Shinjo, Yamagata, Hiroshima, Japan. Distribution. Hiroshima.

Torrenticola (Torrenticola) latipalpis Imamura 1959 [Futohige-keiryûdani]

Torrenticola (Torrenticola) latipalpis Imamura 1959c, p. 427, fig. 1; Imamura 1959a, p. 64; Imamura 1977c, p. 21, fig. 2(4); Imamura 1979a, p. 158.

Type locality. Myojin, Hachioji, Tokyo, Japan. *Distribution*. Tokyo.

Torrenticola (Torrenticola) maglioi (Koenike 1908) [Harabiro-keiryûdani (new name)]

Atractides maglioi Koenike 1908, p. 233, 258, fig. 19.

Torrenticola (Torrenticola) maglioi: Imamura 1953c, p. 424, fig. 8.

Type locality. Varrelgraben, Bremen, Germany. Distribution. Gifu.

Torrenticola (Torrenticola) nipponica (Enami 1940) [Nippon-keiryûdani (new name)]

Atractides (Atractides) nipponicus Enami 1940, p. 221, figs. 15–18.

Torrenticola (Torrenticola) nipponica: Viets 1956, p. 246.

Type locality. Inozawa River, Mitsukuri, Shizuoka, Japan.

Distribution. Shizuoka.

Torrenticola (Torrenticola) subterranea Imamura 1957 [Keiryûchikadani]

Torrenticola (Torrenticola) subterranea Imamura 1957a, p. 354,

fig. 3; Imamura 1959a, p. 64; Imamura 1959c, p. 429, fig. 2; Imamura 1977c, p. 21, fig. 2(5); Imamura 1979a, p. 158. *Type locality*. Aioi, Hyogo, Japan. *Distribution*. Tokyo, Hyogo.

Torrenticola (Torrenticola) ussuriensis (Sokolow 1940) [Usuri-keiryûdani (new name)]

Atractides semisutus: Sokolow 1934, p. 347, figs. 45–49. Atractides (Rusetria) ussuriensis Sokolow 1940, p. 268, fig. 138. Atractides (Rusetria) semisutus: Enami 1940, p. 225, figs. 19–22.

Torrenticola (Rusetria) ussuriensis: Viets 1956, p. 254.
Torrenticola (Torrenticola) ussuriensis: Viets 1987, p. 770.

Type locality. Ussuri, Russia. Distribution. Shizuoka.

Superfamily **Hygrobatoidea** Koch 1842 [Oyogidani-jôka]

Family **Aturidae** Thor 1900 [Hiratadani-ka]

Subfamily **Albiinae** Viets 1915 [Arubidani-aka]

Genus *Albia* Thon 1899 [Arubidani-zoku]

Albia (Spinalbia) makinoi Imamura 1965 [Isuzu-arubidani]

Albia makinoi Imamura 1965a, p. 9, figs. 3–4; Imamura 1980, p. 367, fig. 171D.

Albia (Spinalbia) makinoi: Cook 1974, p. 352.

Type locality. Isuzu River, Kuraguchidani, Ise, Mie, Japan.

Distribution. Mie.

Subfamily **Aturinae** Thor 1900 [Hiratadani-aka]

Genus *Aturus* Kramer 1875 [Hiratadani-zoku]

Aturus amatsuensis Imamura & Nagatsuka 1983 [Amatsu-hiratadani (new name)]

Aturus amatsuensis Imamura & Nagatsuka 1983, p. 229, figs. 2–3.

Type locality. Futama River, Amatsu-kominato, Awa, Chiba, Japan.

Distribution. Chiba.

Aturus caudatus Enami 1940 [Yotsutoge-hiratadani]

Aturus caudatus Enami 1940, p. 249, figs. 39–43; Imamura 1986, p. 388, 391, fig. 20(16).

Aturus (Aturus) caudatus: Imamura 1954b, p. 118, figs. 70–71; Imamura 1960, p. 47; Imamura 1965b, p. 244; Imamura 1980, p. 369, fig. 172C.

Type locality. Inozawa River, Okichiga-fuchi, Shizuoka, Japan.

Distribution. Hokkaido, Ibaraki, Shizuoka, Gifu.

Aturus ezoensis ezoensis Imamura 1954 [Ezo-hiratadani (new name)]

Aturus (Aturus) ezoensis Imamura 1954b, p. 121, figs. 72–73. Aturus ezoensis ezoensis: Pónyi 1956, p. 450.

Type locality. Ishikari River, Sounkyo; Shirigishinai, Hokkaido, Japan.

Distribution. Hokkaido.

Aturus heterocaudus Imamura 1954 [Chigai-hiratadani (new name)]

Aturus (Aturus) heterocaudus Imamura 1954b, p. 124, fig. 74. Aturus heterocaudus: Viets 1987, p. 169.

Type locality. Ishikari River, Sounkyo, Hokkaido, Japan. *Distribution*. Hokkaido.

Aturus hinumaensis Imamura 1960 [Hinuma-hiratadani]

Aturus (Aturus) hinumaensis Imamura 1960, p. 47, fig. 7. Aturus hinumaensis: Viets 1987, p. 169.

Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Aturus hiroshimaensis Imamura 1953 [Hiroshima-hiratadani (new name)]

Aturus hiroshimaensis Imamura 1953b, p. 240, fig. 28.

Type locality. Shinjo, Yamagata, Hiroshima, Japan.

Distribution. Hiroshima.

Aturus imamurai Habeeb 1962 [Suji-hiratadani]

Aturus (Subaturus) semilineatus: Imamura 1961c, p. 38, fig. 3. Aturus imamurai Habeeb 1962, p. 3.

Type locality. Okunikko Trout Hatchery, Okunikko, Tochigi, Japan.

Distribution. Tochigi.

Aturus japonicus Imamura 1953 [Maru-hiratadani (new name)]

Aturus (Aturus) japonicus Imamura 1953c, p. 465. Aturus rotundus Imamura 1953b, p. 242, fig. 29.

Aturus japonicus: Viets 1987, p. 170.

Type locality. Kayu River, Takada, Gunjo, Gifu, Japan. *Distribution*. Gifu, Hiroshima.

Aturus kasamaensis Imamura 1960 [Kasama-hiratadani (new name)]

Aturus (Aturus) kasamaensis Imamura 1960, p. 48, fig. 8. Aturus kasamaensis: Viets 1987, p. 170.

Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Aturus miyashitai Uchida 1934 [Hiratadani]

Aturus miyashitai Uchida 1934b, p. 101, figs. 36–42; Enami 1940, p. 244, figs. 34–38; Imamura 1952a, p. 191; Imamura 1953b, p. 237, fig. 26; Imamura 1964b, p. 9; Imamura 1965b, p. 227, fig. 11(12); Imamura 1986, p. 388.

Aturus (Aturus) miyashitai: Imamura 1953c, p. 461, fig. 30; Imamura 1954b, p. 126, fig. 75; Imamura 1965c, p. 408; Imamura 1980, p. 369, fig. 172A.

Type locality. Yura River, Kyoto, Japan.

Distribution. Hokkaido, Shizuoka, Nagano, Gifu, Kyoto, Hyogo, Hiroshima.

Aturus miyazakii Imamura 1953 [Miyazaki-hiratadani]

Aturus (Aturus) miyazakii Imamura, 1953c, p. 463, figs. 31–32; Imamura 1954b, p. 128.

Aturus miyazakii: Viets 1987, p. 171.

Type locality. Kayu River, Takada, Gunjo, Gifu, Japan. *Distribution*. Hokkaido, Gifu.

Aturus nikkoensis Imamura 1961 [Nikkô-hiratadani]

Aturus (Subaturus) nikkoensis Imamura 1961c, p. 34, figs. 1–2; Imamura 1980, p. 369, fig. 172D.

Aturus nikkoensis: Viets 1987, p. 172.

Type locality. Okunikko Trout Hatchery, Okunikko, Tochigi, Japan.

Distribution. Tochigi.

Aturus orientalis Imamura 1960 [Okina-hiratadani]

Aturus duplex: Imamura 1953b, p. 234, figs. 24-25.

Aturus (Aturus) duplex: Imamura 1953c, p. 461; Imamura 1954b, p. 121.

Aturus orientalis Imamura 1960, p. 49.

Aturus (Aturus) orientalis: Imamura 1980, p. 369, fig. 172B.

Type locality. Sandankyo & Shinjo, Yamagata, Hiroshima, Japan.

Distribution. Hokkaido, Ibaraki, Gifu, Hiroshima.

Aturus ovalis Uchida 1934 [Tamago-hiratadani]

Aturus ovalis Uchida 1934b, p. 95, figs. 29–35; Imamura 1965b, p. 243, fig. 11(34).

Autuus [laps.] ovalis: Uchida 1938, p. 3.

Aturus (Aturus) ovalis: Imamura, 1954b, p. 128, figs. 76-78.

Type locality. Sounkyo, Hokkaido; Kako River, Hyogo, Japan.

Distribution. Hokkaido, Tokyo, Hyogo.

Aturus subterraneus Imamura 1957 [Chika-hiratadani]

Aturus subterraneus Imamura 1957a, p. 375, fig. 24; Imamura 1959a, p. 65; Imamura 1977c, p. 49, fig. 2(42); Imamura 1979a, p. 159.

Type locality. Funakoshi, Mikawa, Shiso, Hyogo, Japan. *Distribution*. Hyogo.

Aturus uchidai Imamura 1953 [Uchida-hiratadani (new name)]

Aturus uchidai Imamura 1953b, p. 238, fig. 27.

Type locality. Shinjo, Yamagata, Hiroshima, Japan. *Distribution*. Hiroshima.

Aturus vietsi Imamura & Nagatsuka 1983 [Fîtsu-hiratadani (new name)]

Aturus vietsi Imamura & Nagatsuka 1983, p. 233, figs. 4-5.

Type locality. Obizo River, Amatsu-kominato, Awa, Chiba, Japan.

Distribution. Chiba.

Genus *Bharatalbia* Cook 1967 [Kiyomizudani-zoku (new name)]

Bharatalbia (Japonalbia) ibarakiensis Imamura 1977 [Nakagawa-kiyomizudani (new name)]

Bharatalbia (Japonalbia) ibarakiensis Imamura 1977b, p. 46, figs. 1–2.

Type locality. Ogawa River & Koto River, Branch of the Naka River, Ibaraki, Japan.

Distribution. Ibaraki.

Bharatalbia (Japonalbia) longipalpis Imamura 1984 [Higenaga-kiyomizudani (new name)]

Bharatalbia (Japonalbia) longipalpis Imamura 1984b, p. 69, fig. 2

Type locality. Koto River, Gozen-yama, Higashi-ibaraki, Ibaraki, Japan.

Distribution. Ibaraki.

Bharatalbia (Japonalbia) ohitaensis Imamura 1984 [Ôita-kiyomizudani (new name)]

Bharatalbia (Japonalbia) ohitaensis Imamura 1984b, p. 68, fig. 1.

Type locality. Bansho River, Yayoi, Minami-amabe, Oita, Japan.

Distribution. Oita.

Bharatalbia (Japonalbia) rotunda Imamura 1984 [Maru-kiyomizudani (new name)]

Bharatalbia (Japonalbia) rotunda Imamura 1984b, p. 73, figs. 4–5.

Type locality. Koto River, Gozen-yama, Higashi-ibaraki, Ibaraki, Japan.

Distribution. Ibaraki.

Bharatalbia (Japonalbia) tsugaruensis Imamura 1984 [Tsugaru-kiyomizudani (new name)]

Bharatalbia (Japonalbia) tsugaruensis Imamura 1984b, p. 71, fig. 3.

Type locality. Imaizumi River, Nakasato, Kita-tsugaru, Aomori, Japan.

Distribution. Aomori.

Genus *Kongsbergia* Thor 1899 [Higebutodani-zoku]

Kongsbergia (Kongsbergia) enamii Imamura 1953 [Enami-higebutodani]

Kongsbergia materna: Enami 1940, p. 255, figs. 44–46.

Kongsbergia enamii Imamura 1953b, p. 246, fig. 32; Imamura 1953c, p. 467, fig. 34; Imamura 1954b, p. 132, fig. 79.

Kongsbergia (Kongsbergia) enamii: Viets 1956, p. 508; Imamura 1960, p. 50; Imamura 1980, p. 371, fig. 173A.

Type locality. Sandankyo, Hiroshima, Japan.

Distribution. Hokkaido, Ibaraki, Gifu, Hiroshima.

Kongsbergia (Kongsbergia) hiroshima Imamura 1953 [Hiroshima-higebutodani (new name)]

Kongsbergia hiroshima Imamura 1953b, p. 243, fig. 30. Kongsbergia (Kongsbergia) hiroshima: Viets 1956, p. 509.

Type locality. Shinjo, Yamagata, Hiroshima, Japan. *Distribution*. Hiroshima.

Kongsbergia (Kongsbergia) ibarakiensis Imamura 1960 [Ibaraki-higebutodani (new name)]

Kongsbergia (Kongsbergia) ibarakiensis Imamura 1960, p. 51, fig. 10.

Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Kongsbergia (Kongsbergia) japonica Imamura 1960 [Yamato-higebutodani (new name)]

Kongsbergia (Kongsbergia) japonica Imamura 1960, p. 50, fig. 9

Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Kongsbergia (Kongsbergia) mishimaensis Imamura 1955 [Mishima-higebutodani]

Kongsbergia (Kongsbergia) mishimaensis Imamura, 1955, p. 188, figs. 5–6; Imamura 1980, p. 371, fig. 173B. *Type locality*. Takekura, Shizuoka, Japan. *Distribution*. Shizuoka.

Kongsbergia (Kongsbergia) rundiformis Imamura 1953 [Maru-higebutodani (new name)]

Kongsbergia rundiformis Imamura 1953c, p. 468, fig. 35. Kongsbergia (Kongsbergia) rotundiformis [laps.]: Viets 1956, p. 510.

Kongsbergia (Kongsbergia) rundiformis: Viets 1987, p. 418. Type locality. Nagara River, Gifu City, Gifu, Japan. Distribution. Gifu.

Kongsbergia (Kongsbergia) tsuchikawai Imamura 1955 [Tsuchikawa-higebutodani]

Kongsbergia (Kongsbergia) tsuchikawai Imamura 1955, p. 190, fig. 7.

Type locality. Takekura, Shizuoka, Japan. Distribution. Shizuoka.

Kongsbergia (Kongsbergia) uchidai Imamura 1953 [Uchida-higebutodani (new name)]

Kongsbergia uchidai Imamura 1953b, p. 245, fig. 31. Kongsbergia (Kongsbergia) uchidai: Viets 1956, p. 511. Type locality. Shinjo, Yamagata, Hiroshima, Japan. Distribution. Hiroshima.

Subfamily **Japonaxonopsinae** Imamura 1984 [Sawamizudani-aka (new name)]

Genus *Japonaxonopsis* Imamura 1984 [Sawamizudani-zoku (new name)]

Japonaxonopsis nozakiensis Imamura 1984 [Nozaki-sawamizudani (new name)]

Japonaxonopsis nozakiensis Imamura 1984a, p. 56, fig. 1.Type locality. Nozaki River, Kusuhara, Kawanabe, Kagoshima, Japan.

Distribution. Kagoshima.

Family **Axonopsidae** Viets 1929 [Kobandani-ka]

Subfamily **Axonopsinae** Viets 1929 [Kobandani-aka]

Genus *Albaxona* Szalay 1944 [Nagakobandani-zoku]

Albaxona (Albaxona) japonica Imamura 1970 [Nagakobandani]

Albaxona (Albaxona) japonica Imamura 1970b, p. 201, figs. 1–2; Imamura 1977c, p. 35, fig. 2(21–22); Imamura 1979a, p. 159; Imamura 1980, p. 363, fig. 169A.

Albaxona japonica: Mori & Miura 1980, p. 25.

Type locality. Lake Biwa, Shirahige, Shiga, Japan.

Type locality. Lake Biwa, Shirahige, Shiga, Japan Distribution. Shiga.

Genus *Axonopsis* Piersig 1893 [Kobandani-zoku]

Axonopsis (Axonopsis) japonicus Tuzovskij 2003 [Nihon-kobandani (new name)]

Axonopsis (Axonopsis) japonicus Tuzovskij 2003c, p. 50, figs. 13–18.

Type locality. Northern part of Lake Biwa, Shiga, Japan. *Distribution.* Shiga.

Axonopsis (Axonopsis) longipalpis Imamura 1956 [Higenaga-kobandani]

Axonopsis (Axonopsis) longipalpis Imamura 1956b, p. 201, fig. 8; Imamura 1959a, p. 64; Imamura 1977c, p. 37, fig. 2(24); Imamura 1979a, p. 158.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo.

Axonopsis (Brachypodopsis) fluviatilis Imamura 1953 [Kawa-kobandani (new name)]

Axonopsis (Hexaxonopsis) fluviatilis Imamura 1953c, p. 460, fig. 29.

Axonopsis (Brachypodopsis) fluviatilis: Viets 1987, p. 187. Type locality. Kayu River, Takada, Gunjo, Gifu, Japan. Distribution. Gifu.

Axonopsis (Brachypodopsis) heteropalpis Imamura 1956 [Kobandani]

Axonopsis (Hexaxonopsis) heteropalpis Imamura 1956b, p. 205, fig. 12; Imamura 1957a, p. 369, figs. 19-20; Imamura 1958a, p. 451; Imamura 1959a, p. 65; Imamura 1959c, p. 434; Imamura 1965c, p. 408; Imamura 1977c, p. 37, fig. 2(26); Imamura 1979a, p. 158.

Axonopsis (Brachypodopsis) heteropalpis: Imamura 1980, p. 365, fig. 170A.

Type locality. Aioi, Hyogo, Japan. Distribution. Tokyo, Ishikawa, Hyogo.

Axonopsis (Brachypodopsis) kasamensis Imamura 1977 [Kasama-kobandani (new name)]

Axonopsis (Brachypodopsis) kasamensis Imamura 1977a, p. 109, fig. 1.

Type locality. Hinuma River, Kasama, Ibaraki, Japan. Distribution. Ibaraki.

Axonopsis (Brachypodopsis) mikawaensis Imamura 1957 [Mikawa-kobandani]

Axonopsis (Hexaxonopsis) mikawaensis Imamura 1957a, p. 371, fig. 21.

Axonopsis (Paraxonopsis) mikawaensis: Imamura 1959a, p. 65; Imamura 1977c, p. 39, fig. 2(29); Imamura 1979a, p. 158.

Axonopsis (?Brachypodopsis) mikawaensis [sic]: Viets 1987, p. 188.

Type locality. Funakoshi, Mikawa, Shiso, Hyogo, Japan. *Distribution*. Hyogo.

Axonopsis (Brachypodopsis) uchidai Imamura 1956 [Uchida-kobandani]

Axonopsis (Axonopsis) uchidai Imamura 1956b, p. 202, fig. 9; Imamura 1958a, p. 450.

Axonopsis (Paraxonopsis) uchidai: Imamura 1959a, p. 65; Imamura 1977c, p. 41, fig. 2(30); Imamura 1979a, p. 159.

Axonopsis (?Brachypodopsis) uchidai [sic]: Viets 1987, p. 189.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo, Kochi.

Axonopsis (Brachypodopsis) yokotai Imamura 1957 [Yokota-kobandani]

Axonopsis (Axonopsis) yokotai Imamura 1957a, p. 368, fig. 18; Imamura 1959a, p. 65; Imamura 1977c, p. 37, fig. 2(25); Imamura 1979a, p. 158.

Axonopsis yokotai: Imamura 1965b, p. 243, fig. 11(33). Axonopsis (Brachypodopsis) yokotai: Viets 1987, p. 189.

Type locality. Sagawa, Kochi, Japan.

Distribution. Kochi.

Axonopsis (Hexaxonopsis) tokyoensis Uchida & Imamura 1953

[Tôkyô-kobandani]

Axonopsis (Hexaxonopsis) tokyoensis Uchida & Imamura 1953a, p. 522, fig. 4; Imamura 1980, p. 363, fig. 169C.

Type locality. Pond in University of Tokyo, Tokyo, Japan.

Distribution. Tokyo.

Axonopsis (Vicinaxonopsis) miurai Imamura 1956 [Miura-kobandani]

Axonopsis (Hexaxonopsis) miurai Imamura 1956b, p. 203, figs. 10–11; 1957a, p. 372; Imamura 1958a, p. 452; Imamura 1959a, p. 65; Imamura 1959b, p. 251; Imamura 1977c, p. 37, fig. 2(27); Imamura 1979a, p. 158.

Axonopsis (Vicinaxonopsis) miurai: Cook 1974, p. 459; Imamura 1980, p. 365, fig. 170B.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo, Kochi, Yamaguchi.

Genus *Brachypoda* Lebert 1879 [Kawariashidani-zoku]

Brachypoda (Brachypoda) ichikawai Imamura 1964 [Ichikawa-kawariashidani (new name)]

Brachypoda (Brachypoda) ichikawai Imamura 1964a, p. 23, figs. 1–2.

Type locality. Yakugachi River & Agina River, Amamioshima, Kagoshima, Japan.

Distribution. Kagoshima.

Brachypoda (Brachypoda) nipponica Imamura 1954 [Yamato-kawariashidani (new name)]

Brachypoda (Brachypoda) nipponica Imamura 1954b, p. 114, figs. 68–69.

Type locality. Kushiro River, Kushiro, Hokkaido, Japan. Distribution. Hokkaido.

Brachypoda (Brachypoda) versicolor (Müller 1776) [Kawariashidani]

Hydrachna versicolor Müller 1776, p. 191.

Brachypoda versicolor var.: Enami 1940, p. 238, figs. 30-33.

Brachypoda versicolor: Imamura 1953b, p. 232, fig. 23.

Brachypoda (Brachypoda) versicolor: Imamura 1953c, p. 460; Imamura 1980, p. 365, fig. 170D.

Type locality. Denmark.

Distribution. Shizuoka, Gifu, Hiroshima.

Genus *Erebaxonopsis* Motas & Tanasachi 1947 [Togarimizudani-zoku]

Erebaxonopsis amamiensis Imamura 1961 [Amamichikadani]

Erebaxonopsis amamiensis Imamura 1959a, p. 64 [nom. nud.]; Imamura 1961a, p. 53, fig. 4; Imamura 1977c, p. 43, fig. 2(32); Imamura 1979a, p. 158.

Type locality. Yakugachi, Sumiyo, Amami-oshima, Kagoshima, Japan.

Distribution. Kagoshima.

Erebaxonopsis morimotoi (Imamura 1958) [Togarimizudani]

Axonopsis (Axonopsis) morimotoi Imamura 1958a, p. 450, fig. 3. Erebaxonopsis morimotoi: Imamura 1959a, p. 64; Imamura 1977c, p. 43, fig. 2(33); Imamura 1979a, p. 158; Imamura 1980, p. 365, fig. 170C.

Type locality. Jinzenji, Kochi City, Kochi, Japan. Distribution. Kochi.

Genus *Lethaxona* Viets 1932 [Higechigaidani-zoku]

Lethaxona (Lethaxona) heteropalpis Uchida & Imamura 1953

[Higechigaidani]

Lethaxona heteropalpis Uchida & Imamura 1953b, p. 20, figs. 1–3; Imamura 1959a, p. 64; Imamura 1965c, p. 408; Imamura 1979a, p. 158.

Lethaxona (Lethaxona) heteropalpis: Imamura 1977c, p. 44, fig. 2(35–36); Imamura 1980, p. 367, fig. 171B.

Type locality. Osaka City, Osaka, Japan.

Distribution. Osaka.

Lethaxona (Lethaxona) hyogoensis Imamura 1956 [Hyôgochikadani]

Lethaxona hyogoensis Imamura 1956b, p. 200, fig. 7; Imamura 1957a, p. 364, fig. 14; Imamura 1959a, p. 64; Imamura 1977c, p. 45, fig. 2(37); Imamura 1979a, p. 158.

Lethaxona (Lethaxona) hyogoensis: Viets 1987, p. 468.

Type locality. Aioi, Hyogo, Japan.

Distribution. Hyogo.

Lethaxona (Lethaxona) mikawaensis Imamura 1957 [Mikawa-higechigaidani]

Lethaxona (Lethaxona) mikawaensis Imamura 1957a, p. 365, figs. 15–16; Imamura 1977c, p. 46, fig. 2(38–39); Imamura 1980, p. 367, fig. 171C.

Lethaxona mikawaensis: Imamura 1959a, p. 64; Imamura 1979a, p. 158; Imamura 1986, p. 390, fig. 20(15).

Type locality. Funakoshi, Mikawa, Shiso, Hyogo, Japan. *Distribution*. Hyogo.

Lethaxona (Lethaxona) miurai Imamura 1957 [Miura-higechigaidani]

Lethaxona (Lethaxona) miurai Imamura 1957a, p. 367, fig. 17; Imamura 1977c, p. 47, fig. 2(40).

Lethaxona miurai: Imamura 1959a, p. 64; Imamura 1979a, p. 158.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo.

Lethaxona (Lethaxona) morimotoi Imamura 1977 [Morimoto-higechigaidani (new name)]

Lethaxona morimotoi Imamura 1977a, p. 111, fig. 2. Lethaxona (Lethaxona) morimotoi: Viets 1987, p. 469. Type locality. Wadayama, Asago, Hyogo, Japan. Distribution. Hyogo.

Genus *Ljania* Thor 1898 [Kakukobandani-zoku]

Ljania japonica Imamura 1956 [Kakukobandani]

Ljania japonica Imamura 1956b, p. 207, fig. 13; Imamura 1959a, p. 65; Imamura 1977c, p. 44, fig. 2(34); Imamura 1979a, p. 159; Imamura 1980, p. 367, fig. 171A. *Type locality*. Aioi, Hyogo, Japan.

Distribution. Hyogo.

Genus *Stokaxonopsis* Cook 1967 [Chikakobandani-zoku (new name)]

Stokaxonopsis subterranea (Uchinda & Imamura 1953) [Chikakobandani]

Axonopsis (Hexaxonopsis) subterranus Uchinda & Imamura 1953a, p. 519, fig. 3.

Axonopsis (Hexaxonopsis) subterranea: Imamura 1959a, p. 65; Imamura 1970b, p. 204, fig. 4; Imamura 1977c, p. 39, fig. 2(28); Imamura 1979a, p. 158; Imamura 1980, p. 363, fig. 169D; Mori & Miura 1980, p. 25.

Axonopsis (Stokaxonopsis) subterranea: Cook 1967, p. 174. Stokaxonopsis subterranea: Cook 1974, p. 337.

Axonopsis subterranea: Imamura 1986, p. 390, fig. 20(15).

Type locality. Osaka City, Osaka, Japan.

Distribution. Osaka, Shiga.

Genus *Uenaxonopsis* Imamura 1961 [Uenodani-zoku]

Uenaxonopsis nazensis Imamura 1961 [Uenodani]

Uenaxonopsis nazensis Imamura 1959a, p. 64 [nom. nud.];
Imamura 1961a, p. 55, fig. 5; Imamura 1965b, p. 244;
Imamura 1977c, p. 36, fig. 2(23); Imamura 1979a, p. 158;
Imamura 1980, p. 363, fig. 169B; Imamura 1986, p. 388.

Type locality. Komata, Naze, Amami-oshima, Kagoshima, Japan.

Distribution. Kagoshima.

Subfamily **Frontipodopsinae** Viets 1931 [Maeashidani-aka]

Genus *Frontipodopsis* Walter 1919 [Maeashidani-zoku]

Frontipodopsis reticulatifrons okinawaensis Imamura 1957 [Amami-maeashidani]

Frontipodopsis reticulatifrons var. okinawaensis Imamura 1957a, p. 373, fig. 23.

Frontipodopsis reticulatifrons okinawaensis: Imamura 1959a, p. 65; Imamura 1977c, p. 33, fig. 2(20); Imamura 1979a, p. 159; Imamura 1980, p. 361, fig. 168D.

Type locality. Naze, Amami-oshima, Kagoshima, Japan. Distribution. Kagoshima.

Family **Feltriidae** Viets 1926 [Hôsekidani-ka]

Subfamily **Feltriinae** Viets 1926 [Hôsekidani-aka]

Genus *Feltria* Koenike 1892 [Hôsekidani-zoku]

Feltria (Azugofeltria) miurai Imamura 1957 [Miura-hôsekidani]

Feltria (Feltria) miurai Imamura 1957a, p. 362, figs. 11–13; Imamura 1959a, p. 64.

Feltria miurai: Imamura 1965b, p. 224, fig. 11(9).

Feltria (Azugofeltria) miurai: Imamura 1977c, p. 30, fig. 2(16–17); Imamura 1979a, p. 158; Imamura 1980, p. 357, fig. 166D.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo.

Feltria (Feltria) conica Imamura 1957 [Toge-hôsekidani]

Feltria (Feltria) conica Imamura 1957a, p. 360, figs. 9–10; Imamura 1959a, p. 64; Imamura 1977c, p. 29, fig. 2(14–15); Imamura 1979a, p. 158.

Feltria conica: Imamura 1965b, p. 242; Imamura 1986, p. 388.Type locality. Aioi, Hyogo, Japan.Distribution. Hyogo.

Feltria (Feltria) cornuta japonica Imamura 1954 [Tsuno-hôsekidani]

Feltria (Feltria) cornuta var. japonica Imamura 1954b, p. 89, fig. 52.

Feltria (Feltria) cornuta japonica: Viets 1956, p. 406; Imamura 1980, p. 357, fig. 166A; Imamura & Kikuchi 1986, p. 326, fig. 1.

Feltria cornuta japonica: Imamura 1965b, p. 241, fig. 11(31). Type locality. Shokotsu River, Kami-shokotsu, Monbetsu, Hokkaido, Japan.

Distribution. Hokkaido.

Feltria (Feltria) ezoensis Imamura 1954 [Ezo-hôsekidani (new name)]

Feltria ezoensis Imamura 1954b, p. 101, fig. 59. Feltria (Feltria) ezoensis: Viets 1987, p. 267.

Type locality. Ishikari River, Sounkyo, Hokkaido, Japan. *Distribution*. Hokkaido.

Feltria (Feltria) ishikariensis Imamura 1954 [Ishikari-hôsekidani (new name)]

Feltria ishikariensis Imamura 1954b, p. 102, fig. 60; Imamura 1986, p. 386, fig. 20(13).

Feltria (?Feltria) ishikariensis [sic]: Viets 1987, p. 269.

Type locality. Ishikari River, Sounkyo; Shokotsu River, Kami-shokotsu, Hokkaido, Japan.

Distribution. Hokkaido.

Feltria (Feltria) matsumotoi Imamura 1959 [Matsumoto-hôsekidani]

Feltria matsumotoi Imamura 1959c, p. 432, fig. 5; Imamura 1977c, p. 31, fig. 2(18); Imamura 1979a, p. 158.

Feltria (Feltria) matsumotoi: Imamura 1959a, p. 64.

Type locality. Myojin, Hachioji, Tokyo, Japan.

Distribution. Tokyo.

Feltria (Feltria) minuta Koenike 1892 [Hime-hôsekidani]

Feltria minuta Koenike 1892b, p. 323, figs. 3–4; Imamura 1964b, p. 9; Imamura 1965b, p. 242; Imamura 1986, p. 388. Feltria (Mesofeltria) rotunda Uchida 1934b, p. 112, figs. 48–50. Feltria (Mesofeltria) torrenticola Uchida 1934b, p. 107 (male), figs. 43–45.

Feltria (Feltria) minuta: Imamura 1953c, p. 457, fig. 27; Imamura 1954b, p. 91, figs. 53–54; Imamura 1965c, p. 407. *Type locality*. Rhätikon, Switzerland.

Distribution. Hokkaido, Nagano, Gifu, Hyogo.

Feltria (Feltria) obihiroensis Imamura 1962 [Obihiro-hôsekidani]

Feltria obihiroensis Imamura 1962, p. 252, fig. 1; Imamura 1977c, p. 32, fig. 2(19); Imamura 1979a, p. 158.

Feltria (Feltria) obihiroensis: Viets 1987, p. 270.

Type locality. Obihiro, Hokkaido, Japan. Distribution. Hokkaido.

Feltria (Feltriella) macroplata Imamura 1954 [Murasaki-hôsekidani]

Feltria (Feltriella) macroplata Imamura 1954b, p. 94, figs. 55–56.

Feltria (Feltriella) macroplata macroplata: Imamura 1980, p. 357, fig. 166C.

Type locality. Ishikari River, Sounkyo & Kamikoshi, Hokkaido, Japan.

Distribution. Hokkaido.

Feltria (Feltriella) rubra Piersig 1898 [Rubîdani]

Feltria rubra Piersig, 1898, p. 10; Imamura 1965b, p. 242; Imamura 1986, p. 388, fig. 20(14).

Feltria (Mesofeltria) torrenticola Uchida 1934b, p. 107 (female), figs. 46-47.

Feltria (Feltriella) rubra: Imamura 1954b, p. 98, figs. 57–58; Imamura 1980, p. 357, fig. 166B.

Type locality. The High Tatras, Slovakia.

Distribution. Hokkaido.

Family **Hygrobatidae** Koch 1842 [Oyogidani-ka]

Subfamily **Hygrobatinae** Koch 1842 [Oyogidani-aka]

Genus *Atractides* Koch 1837 [Magariashidani-zoku]

Atractides (Atractides) gifuensis Imamura 1953 [Gifu-magariashidani (new name)]

Atractides (Atractides) gifuensis Imamura 1953c, p. 439, fig. 18.

Type locality. Kami-haguri, Hajima; Akasaka, Fuwa;

Toda River, Iwanoda, Gifu City, Gifu, Japan. *Distribution*. Gifu.

Atractides (Atractides) gracilis (Sokolow 1934) [Hoso-magariashidani (new name)]

Megapus gracilis Sokolow 1934, p. 366, figs. 73–75. Atractides (Atractides) gracilis: Imamura 1953b, p. 227, fig. 20.

Type locality. Ussuri, Russia. Distribution. Hiroshima.

Atractides (Atractides) hinumaensis Imamura 1960 [Hinuma-magariashidani (new name)]

Atractides (Atractides) hinumaensis Imamura 1960, p. 41, fig. 2. Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Atractides (Atractides) hyogoensis Imamura 1957 [Hyôgodani]

Atractides (Atractides) hyogoensis Imamura 1957a, p. 356, fig. 5; Imamura 1958a, p. 450; Imamura 1959a, p. 64; Imamura 1977c, p. 25, fig. 2(7); Imamura 1979a, p. 158; Imamura 1980, p. 353, fig. 164A.

Type locality. Funakoshi, Mikawa, Shiso, Hyogo, Japan. Distribution. Hyogo, Kochi.

Atractides (Atractides) ibarakiensis Imamura 1960 [Ibaraki-magariashidani (new name)]

Atractides (Atractides) ibarakiensis Imamura 1960, p. 42, fig. 3.

Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Atractides (Atractides) imamurai Viets 1959 [Higeboso-magariashidani (revised name)]

Atractides (Atractides) spatiosus: Imamura 1953b, p. 224, figs. 18–19.

Atractides (Atractides) imamurai Viets 1959, p. 434.

Atractides (Atractides) spatiosus spatiosus: Imamura 1980, p. 351, fig. 163D.

Type locality. Sandankyo, Hiroshima, Japan. *Distribution*. Hiroshima.

Atractides (Atractides) izuensis (Enami 1940) [Izu-magariashidani (new name)]

Megapus (Megapus) izuensis Enami 1940, p. 233, figs. 26–29. Atractides (Atractides) izuensis: Imamura 1953b, p. 229, fig. 21.

Type locality. Inozawa River, Mitsukuri, Shizuoka, Japan. Distribution. Shizuoka, Hiroshima.

Atractides (Atractides) kantoensis Imamura 1960 [Kantô-magariashidani (new name)]

Atractides (Atractides) kantoensis Imamura 1960, p. 43, fig. 4. Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Atractides (Atractides) kasamaensis Imamura 1960 [Kasama-magariashidani (new name)]

Atractides (Atractides) kasamaensis Imamura 1960, p. 44, fig. 5.

Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Atractides (Atractides) kotoensis Imamura 1983 [Kôto-magariashidani (new name)]

Atractides (Atractides) kotoensis Imamura 1983, p. 54, fig. 1.

Type locality. Koto River, Gozen-yama, Higashi-ibaraki, Ibaraki, Japan.

Distribution. Ibaraki.

Atractides (Atractides) longipalpis Imamura 1960 [Higenaga-magariashidani (new name)]

Atractides (Atractides) longipalpis Imamura 1960, p. 46, fig. 6. Type locality. Hinuma River, Fukuda, Kasama, Ibaraki, Japan.

Distribution. Ibaraki.

Atractides (Atractides) miurai Imamura 1956 [Miura-magariashidani]

Atractides (Atractides) miurai Imamura 1956b, p. 197, figs. 4–6; Imamura 1957a, p. 357, fig. 6; Imamura 1959a, p. 64; Imamura 1977c, p. 25, fig. 2(8); Imamura 1979a, p. 158. *Type locality*. Aioi, Hyogo, Japan. *Distribution*. Hyogo.

Atractides (Atractides) nodipalpis miyazakii Imamura 1953 [Miyazaki-magariashidani (new name)]

Atractides (Atractides) nodipalpis var. miyazakii: Imamura 1953c, p. 434, figs. 14–16.

Atractides (Atractides) nodipalpis miyazakii: Viets 1956, p. 338

Type locality. Nagara River, Gifu City; Kiso River, Shimohaguri, Hajima, Gifu, Japan.

Distribution. Gifu.

Atractides (Atractides) nodipalpis nodipalpis (Thor 1899) [Magariashidani]

Megapus nodipalpis Thor, 1899, p. 39, figs. 120–121; Uchida 1931a, p. 267, figs. 9–13; Uchida 1934b, p. 95; Uchida 1938, p. 2; Imamura 1951d, p. 274, figs. 1–8.

Atractides (Atractides) nodipalpis nodipalpis: Imamura 1953c, p. 437; Imamura 1954b, p. 86, fig. 50; Imamura 1955, p. 188; Imamura 1960, p. 43.

Atractides nodipalpis nodipalpis: Imamura 1964b, p. 9; Imamura 1980, p. 351, fig. 163C.

Atractides nodipolpis [laps.]: Imamura 1965b, p. 240. Atractides (Atractides) nodipalpis: Imamura 1965c, p. 406.

Atractides nodipalpis: Imamura 1986, p. 384.

Type locality. Norway.

Distribution. Hokkaido, Ibaraki, Tokyo, Shizuoka, Nagano, Gifu, Kyoto, Ehime.

Atractides (Atractides) subterraneus japonensis Imamura 1958 [Chika-magariashidani]

Atractides (Atractides) subterraneus japonensis Imamura 1958a, p. 448, fig. 2; Imamura 1959a, p. 64; Imamura 1977c, p. 26, fig. 2 (9); Imamura 1979a, p. 158.

Atractides subterraneus japonensis: Imamura 1965b, p. 240; Imamura 1986, p. 384.

Type locality. Kita-azuma, Takefu, Fukui, Japan. *Distribution*. Fukui.

Atractides (Atractides) violaceus Imamura 1953 [Sumire-magariashidani (new name)]

Atractides (Atractides) violaceus Imamura 1953c, p. 438, fig. 17. Atractides violaceus: Imamura 1986, p. 386, fig. 20(13).

Type locality. Kayu River, Takada, Gunjo, Gifu, Japan. Distribution. Gifu.

Atractides (Octomegapus) aioiensis Imamura 1957 [Aioi-magariashidani]

Atractides (Octomegapus) aioiensis Imamura 1957a, p. 358, fig. 7; Imamura 1959a, p. 64; Imamura 1977c, p. 26, fig. 2(10); Imamura 1979a, p. 158.

Type locality. Aioi, Hyogo, Japan.

Distribution. Hyogo.

Genus *Hygrobates* Koch 1837 [Oyogidani-zoku]

Hygrobates (Hygrobates) bibi Matsumoto et al. 2005 [Bibi-oyogidani (new name)]

Hygrobates (Hygrobates) japonicus: Imamura 1953c, p. 429, fig.12; Imamura 1955, p. 188; Imamura 1980, p. 348, fig. 162A.

Hygrobates (Hygrobates) bibi Matsumoto et al. 2005a, p. 1897, figs. 2-3.

Type locality. Bibi River, Bibi, Chitose, Hokkaido, Japan.

Distribution. Hokkaido, Tokyo, Shizuoka, Gifu.

Hygrobates (Hygrobates) biwaensis Tuzovskij 2003 [Biwa-oyogidani (new name)]

Hygrobates (Hygrobates) biwaensis Tuzovskij 2003b, p. 1325, figs. 1–3; Matsumoto et al. 2005b, p. 29, fig. 2A.

Type locality. Lake Biwa, Kita-komatsu, Shiga, Japan. *Distribution*. Shiga.

Hygrobates (Hygrobates) calliger calliger Piersig 1896 [Kawa-oyogidani]

Hygrobates calliger Piersig, 1896, p. 439; Imamura 1964b, p. 9; Imamura 1965b, p. 240; Imamura 1986, p. 384.

Hygrobates (Hygrobates) calliger calliger: Viets 1930, p. 379; Imamura 1960, p. 41; Imamura 1980, p. 349, fig. 162B.

Hygrobates (Hygrobates) calliger: Enami 1940, p. 230, figs. 23–25; Imamura 1953b, p. 220, fig. 16; Imamura 1953c, p. 428, fig. 11; Imamura 1954b, p. 75; Imamura 1955, p. 188; Matsumoto et al. 2005a, p. 1903, figs. 6–7.

Hygrobates calliger calliger: Sonobe 1991, p. 82.

Type locality. Thüringen, Germany.

Distribution. Hokkaido, Tochigi, Ibaraki, Shizuoka, Nagano, Gifu, Hiroshima.

Hygrobates (Hygrobates) capillus Matsumoto et al. 2005 [Hosoge-oyogidani (new name)]

Hygrobates (Hygrobates) capillus Matsumoto et al. 2005b, p. 31, figs. 2C, 3-4.

Type locality. Kizu River, Kyotanabe, Kyoto, Japan. Distribution. Kyoto.

Hygrobates (Hygrobates) foreli (Lebert 1874) [Nagare-oyogidani]

Campognatha [part.] foreli Lebert 1874, p. 645.

Hygrobates foreli: Uchida 1934b, p. 92, fig. 25; Imamura 1965b, p. 240, fig. 11(29).

Hygrobates (Hygrobates) foreli: Imamura 1954b, p. 75, figs. 43–44; Matsumoto et al. 2005a, p. 1910, figs. 9–10.

Type locality. Switzerland.

Distribution. Hokkaido.

Hygrobates (Hygrobates) heteropalpis Imamura 1954 [Chigai-oyogidani (new name)]

Hygrobates (Hygrobates) heteropalpis Imamura 1954b, p. 77, fig. 45.

Type locality. Ebeotsu, Hokkaido, Japan.

Distribution. Hokkaido.

Hygrobates (Hygrobates) japonicus Uchida 1931 [Nippon-oyogidani]

Hygrobates japonicus Uchida 1931a, p. 265, figs. 5-8; Uchida 1938, p. 2.

Hygrobates (Hygrobates) japonicus: Matsumoto et al. 2005a, p. 1914, figs. 11-12.

Type locality. Shakujii, Tokyo, Japan.

Distribution. Hokkaido, Tokyo, Shizuoka, Gifu.

Hygrobates (Hygrobates) longipalpis (Hermann 1804) [Oyogidani]

Hydrarachna longipalpis Hermann 1804, p. 55, plate 3: fig. 1, plate 9: fig. P.

Hygrobates longipalpis: Uchida 1931a, p. 262, figs. 1–2; Uchida 1938, p. 2; Imamura 1952a, p. 191; Imamura 1965b, p. 240; Imamura 1986, p. 384.

Hygrobates (Hygrobates) longipalpis: Imamura 1950b, p. 74, figs. 1–7; Imamura 1954b, p. 79, figs. 46–47; Imamura 1955, p. 188; Imamura 1965c, p. 406; Imamura 1980, p. 349, fig. 162C; Matsumoto et al. 2005a, p. 1920, figs. 13–14.

Type locality. France.

Distribution. Hokkaido, Tokyo, Shizuoka.

Hygrobates (Hygrobates) longiporus Thor 1898 [Hirase-oyogidani (revised name)]

Hygrobates longiporus Thor 1898, p. 272; Matsumoto et al. 2005a, p. 1924, figs. 15–16.

Hygrobates (Hygrobates) longiporus: Imamura 1953b, p. 216, figs. 14–15; Imamura 1953c, p. 432; Imamura 1954b, p. 82; Imamura 1980, p. 349, fig. 162D.

Type locality. Norway.

Distribution. Hokkaido, Gifu, Hiroshima.

Hygrobates (Hygrobates) minutus Imamura 1953 [Hime-oyogidani (new name)]

Hygrobates (Hygrobates) minutus Imamura 1953b, p. 222, fig. 17; Imamura 1953c, p. 432.

Type locality. Shinjo, Yamagata, Hiroshima, Japan. Distribution. Gifu, Hiroshima.

Hygrobates (Hygrobates) nigromaculatus nigromaculatus Lebert 1879

[Madara-oyogidani (new name)]

Hygrobates nigro-maculatus [sic] Lebert 1879, p. 342.

Hygrobates (Hygrobates) nigromaculatus nigromaculatus: Viets 1987, p. 379.

Hygrobates (Hygrobates) nigromaculatus: Matsumoto et al. 2005a, p. 1928, figs. 17–18.

Type locality. Switzerland.

Distribution. Hokkaido.

Hygrobates (Hygrobates) papillosus Imamura 1953 [Tsubu-oyogidani (new name)]

Hygrobates (Hygrobates) papillosus Imamura 1953b, p. 214, fig. 13; Imamura 1953c, p. 432.

Type locality. Shinjo, Yamagata, Hiroshima, Japan. *Distribution*. Gifu, Hiroshima.

Hygrobates (Hygrobates) rarus Tuzovskij 2003 [Rarusu-oyogidani (new name)]

Hygrobates (Hygrobates) rarus Tuzovskij 2003b, p. 1329, figs. 4–7; Matsumoto et al. 2005b, p. 30, fig. 2B.

Type locality. Lake Biwa, Kita-komatsu, Shiga, Japan. Distribution. Shiga.

Hygrobates (Hygrobates) sinensis Uchida & Imamura 1951 [Kara-oyogidani (revised name)]

Hygrobates sinensis Uchida & Imamura 1951, p. 329, fig. 3. Hygrobates (Hygrobates) sinensis: Imamura 1953c, p. 432, fig. 13; Imamura 1980, p. 351, fig. 163A.

Type locality. Hubei, China.

Distribution. Gifu.

Hygrobates (Hygrobates) sokolowi sokolowi Thor 1927 [Sokorô-oyogidani (new name)]

Hygrobates (Rhabdotobates) sokolowi Thor 1927, p. 132, figs. 8–10.

Hygrobates (Hygrobates) sokolowi: Viets 1987, p. 383. Hygrobates (Hygrobates) sokolowi: Matsumoto et al. 2005a, p. 1932, figs. 19–20.

Type locality. Karelia, Russia. Distribution. Hokkaido.

Hygrobates (Hygrobates) variabilis Tuzovskij 2003 [Kawari-oyogidani (new name)]

Hygrobates (Hygrobates) variabilis Tuzovskij 2003b, p. 1333, figs. 8-10.

Type locality. Northern part of Lake Biwa, Shiga, Japan. *Distribution*. Shiga.

Hygrobates (Rivobates) ezoensis (Uchida 1934) [Izumi-oyogidani]

Rivobates ezoensis Uchida 1934b, p. 92, figs. 26-28; Imamura 1952a, p. 191.

Hygrobates (Rivobates) ezoensis: Imamura 1954b, p. 82, fig. 48; Matsumoto et al. 2005a, p. 1935, figs. 21–23.

Hygrobates (Rivobates) diversiporus: Imamura 1980, p. 350, fig. 163B

Type locality. Chitose, Hokkaido, Japan.

Distribution. Hokkaido.

Hygrobates (Rivobates) taniguchii Imamura 1954 [Taniguchi-oyogidani (new name)]

Hygrobates (Rivobates) taniguchii Imamura 1954b, p. 84, fig. 49.

Type locality. Shokotsu River, Kami-shokotsu, Monbetsu, Hokkaido, Japan.

Distribution. Hokkaido.

Family **Pionidae** Thor 1900 [Tsuchidani-ka]

Subfamily **Foreliinae** Thor 1923 [Ikedani-aka]

Genus *Forelia* Haller 1882 [Ikedani-zoku]

Forelia (Forelia) orientalis Tuzovskij 2003 [Higashi-ikedani (new name)]

Forelia orientalis Tuzovskij 2003c, p. 49, figs. 1–12.

Type locality. Northern part of Lake Biwa, Shiga, Japan. *Distribution*. Shiga.

Forelia (Forelia) variegator variegator (Koch 1837) [Kita-ikedani (new name)]

Arrenurus variegator Koch 1837, p. 24.
Forelia variegator: Uchida 1940a, p. 280, fig. 1.
Forelia (Forelia) variegator variegator: Viets 1956, p. 467.
Type locality. Germany.
Distribution. Hokkaido.

Subfamily **Pioninae** Thor 1900 [Tsuchidani-aka]

Genus *Piona* Koch 1842 [Tsuchidani-zoku]

Piona (Piona) carnea (Koch 1836) [Bekkô-tsuchidani]

Nesaea carnea Koch 1836, p. 24.

Piona carnea: Uchida 1932, p. 144, figs. 1–5, 12–13; Imamura 1965b, p. 219, fig. 11(2, 3, 7, 10).

Piona (Piona) carnea: Imamura 1954a, p. 709, figs. 1–2;Imamura 1954b, p. 109, fig. 64; Kadota & Kokubo 1960, p. 857; Imamura 1980, p. 359, fig. 167C.

Type locality. Germany.

Distribution. Hokkaido, Gunma, Nagano.

Piona (Piona) coccinea coccinea (Koch 1836) [Ike-tsuchidani]

Nesaea coccinea Koch 1836, p. 11-12.

Piona coccinea coccinea: Imamura 1953d, p. 270, fig. 5.

Piona (Piona) coccinea coccinea: Viets 1956, p. 438; Imamura 1980, p. 359, fig. 167A.

Type locality. Germany.

Distribution. Hyogo.

Piona (Piona) pusilla pusilla (Neuman 1875) [Tsuchidani]

Nesaea pusilla Neuman 1875, p. 100.

Nesaea rotunda Kramer 1879, p. 12, fig. 6.

Piona rotunda var.: Imamura 1953d, p. 272, fig. 6.

Piona (Piona) rotunda: Imamura 1954b, p. 111, figs. 65–67; Imamura 1965c, p. 408.

Piona (Piona) rotunda rotunda: Imamura 1980, p. 359, fig. 167P

Piona (Piona) pusilla pusilla: Viets 1987, p. 636.

Type locality. Sweden.

Distribution. Hokkaido, Hyogo.

Piona (Tetrapiona) discrepans (Koenike 1895) [Chiri-tsuchidani (new name)]

Curvipes discrepans Koenike 1895b, p. 381, figs. 5-6. Piona discrepans: Walter 1907, p. 536; Uchida 1932, p. 144, fig. 7.

Piona (Tetrapiona) discrepans: Viets 1936, p. 341, 355, figs. 374a-c, 399a-b.

Type locality. Germany.

Distribution. Tokyo.

Subfamily **Tiphysinae** Oudemans 1941 [Himetsuchidani-aka]

Genus *Pionacercus* Piersig 1894 [Himetsuchidani-zoku]

Pionacercus (Pionacercus) japonicus Imamura 1954 [Himetsuchidani]

Pionacercus (Pionacercus) japonicus Imamura 1954c, p. 161, figs. 8–9; Imamura 1980, p. 359, fig. 167D.

Type locality. Oguni, Kariwa, Niigata, Japan. Distribution. Niigata.

Genus *Pionopsis* Piersig 1894 [Nisetsuchidani-zoku]

Pionopsis (Pionopsis) lutescens japonensis Imamura 1951 [Nisetsuchidani]

Pionopsis (Pionopsis) lutescens japonensis Imamura 1950e, p. 188, figs. 1–10 [nom. nud.]; Imamura 1951d, p. 283, figs. 18–27; Imamura 1954b, p. 109; Imamura 1980, p. 361, fig. 168C.

Pionopsis lutescens japonensis: Imamura 1965b, p. 242, fig. 11

(32); Imamura 1986, p. 387, fig. 20(14). *Type locality*. Asahigawa, Hokkaido, Japan. *Distribution*. Hokkaido.

Genus *Tiphys* Koch 1836 [Momobutodani-zoku]

Tiphys (Tiphys) daisetsuensis Imamura 1954 [Daisetsu-momobutodani]

Tiphys (Tiphys) daisetsuensis Imamura 1954b, p. 104, figs. 61–63; Imamura 1965c, p. 407; Imamura 1980, p. 361, fig. 168A.

Type locality. Marshes on Mt. Daisetsu (Sugataminoike, Numanodaira, & Hisagonuma), Hokkaido, Japan. *Distribution*. Hokkaido.

Tiphys (Tiphys) scaurus (Koenike 1892) [Nami-momobutodani]

Piona scaura Koenike 1892a, p. 266, fig. 1.
Acercus scaurus Thor 1903, p. 66; Imamura 1952a, p. 191.
Tiphys scaurus: Viets 1949, p. 302; Imamura 1953d, p. 268, fig. 4; Imamura 1965b, p. 227, fig. 11(12); Imamura 1986, p. 387, fig. 20(14).

Tiphys (Tiphys) scaurus: Imamura 1980, p. 361, fig. 168B.

Type locality. Germany.

Distribution. Hokkaido, Hyogo.

Family **Pontarachnidae** Koenike 1910 [Isodani-ka]

Subfamily **Pontarachninae** Koenike 1910 [Isodani-aka]

Genus *Litarachna* Walter 1925 [Wadatsumidani-zoku]

Litarachna (Litarachna) divergens Walter 1925 [Wadatsumidani]

Litarachna divergens Walter 1925, p. 39; Uchida 1935, p. 187, figs. 4–6; Imamura 1965c, p. 405; Honma & Kitami 1978, p. 37; Imamura 1980, p. 347, fig. 161A.

Litarachna (Litarachna) divergens: Viets 1987, p. 500.

Type locality. Trieste, Italy. Distribution. Hokkaido, Niigata.

Litarachna (Litarachna) kamui Uchida 1935 [Kamui-wadatsumidani]

Litarachna kamui Uchida 1935, p. 191, figs. 7–9. Litarachna (Litarachna) kamui: Viets 1987, p. 500. Type locality. Usu & Oshoro, Hokkaido, Japan.

Distribution. Hokkaido.

Genus *Pontarachna* Philippi 1840 [Isodani-zoku]

Pontarachna hinumaensis Imamura 1958 [Hinuma-isodani]

Pontarachna hinumaensis Imamura 1958b, p. 55, figs. 1–2;Imamura 1965b, p. 238, fig. 11(27);Imamura 1980, p. 160D;Imamura 1986, p. 381.

Type locality. Hinuma, Ibaraki, Japan.

Distribution. Ibaraki.

Pontarachna pacifica pacifica Uchida 1935 [Kita-isodani]

Pontarachna pacifica Uchida 1935, p. 183, figs. 1–3. Pontarachna pacifica pacifica: Viets 1956, p. 264. Pontarachna pacificum: Imamura 1965b, p. 238. Type locality. Oshoro, Hokkaido, Japan. Distribution. Hokkaido.

Family **Unionicolidae** Oudemans 1909 [Kaidani-ka]

Subfamily **Pionatacinae** Viets 1916 [Nisekaidani-aka]

Genus *Neumania* Lebert 1879 [Nisekaidani-zoku]

Neumania (Ecpolopsis) multiscutata japonica (Uchida & Imamura 1953)

[Tate-nisekaidani (new name)]

Ecpolopsis multiscutata: Uchida 1939, p. 451.

Koenikea (Ecpolopsis) multiscutata var. japonica Uchida & imamura 1953a, p. 517, fig. 2.

Koenikea (Ecpolopsis) multiscutata japonica: Viets 1956, p. 399; Imamura 1965c, p. 407.

Neumania (Ecpolopsis) multiscutata japonica: Cook 1967, p. 136

Type locality. Osaka City, Osaka, Japan. Distribution. Osaka.

Neumania (Neumania) ambigua Piersig 1906 [Togehada-nisekaidani]

Neumania ambigua Piersig 1906, p. 329, figs. 28–30. Neumania (Neumania) ambigua: Imamura 1954b, p. 89; Imamura 1954c, p. 156, fig. 5; Imamura 1980, p. 355, fig.

Type locality. Sumatra, Indonesia. Distribution. Hokkaido, Niigata.

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Neumania (Neumania) angulata Sokolow 1931 [Kaidanimodoki]

Neumania angulata Sokolow 1931, p. 494, figs. 57-58, plate 10: figs. 14-16.

Neumania (Neumania) angulata: Imamura 1953c, p. 455, fig. 26; Imamura 1965c, p. 407.

Type locality. Ussuri, Russia.

Distribution. Gifu.

Neumania (Neumania) deltoides (Piersig 1894) [Nisekaidani]

Atax deltoides Piersig 1894, p. 110.

Neumania (Neumania) nodosa: Imamura 1953d, p. 266, fig. 3. Neumania (Neumania) deltoides: Imamura 1956a, p. 23, figs. 1–2; Imamura 1980, p. 355, fig. 165B.

Type locality. Germany. Distribution. Ibaraki, Hyogo.

Neumania (Neumania) japonica Imamura 1954 [Nihon-nisekaidani (new name)]

Neumania (Neumania?) japonica [sic] Imamura 1954c, p. 158, fig. 6.

Neumania (Neumania) japonica: Viets 1956, p. 377.

Type locality. Kakizaki, Nakakubiki, Niigata, Japan. Distribution. Niigata.

Remarks. Viets (1987) pointed out that the species will become homonym with *Neumania (Ecpolopsis) multiscutata japonica* (Uchida & Imamura 1953).

Neumania (Neumania) morimotoi Imamura 1961 [Morimoto-nisekaidani]

Neumania (Neumania) morimotoi Imamura 1959a, p. 64 [nom. nud.]; Imamura 1961a, p. 49, figs. 1–2; Imamura 1977c, p. 27, fig. 2(11); Imamura 1979a, p. 158.

Neumania morimotoi: Imamura 1965b, p. 241; Imamura 1986, p. 384.

Type locality. Komata, Naze, Amami-oshima, Kago-shima, Japan.

Distribution. Kagoshima.

Neumania (Neumania) nodosa nodosa (Daday 1898) [Fushi-nisekaidani (new name)]

Atax nodosus Daday 1898, p. 97.

Neumania nodosa: Uchida 1937, p. 26.

Neumania (Neumania) nodosa: Imamura 1961a, p. 51, fig. 3. Neumania (Neumania) nodosa nodosa: Viets 1987, p. 560.

Type locality. Sri Lanka.

Distribution. Kumamoto, Kagoshima.

Neumania (Neumania) satoi Imamura 1954 [Satô-nisekaidani (new name)]

Neumania (Neumania) satoi Imamura 1954b, p. 89 [nom. nud.]; Imamura 1954c, p. 160, fig. 7.

Type locality. Oguni, Kariwa, Niigata, Japan. *Distribution*. Hokakido, Niigata.

Neumania (Neumania) spinipes (Müller 1776) [Toge-nisekaidani (new name)]

Hydrachna spinipes Müller 1776, p. 189.

Neumania spinipes: Uchida 1938, p. 2; Uchida 1939, p. 451. Neumania (Neumania) spinipes: Viets 1956, p. 380.

Type locality. Denmark. *Distribution.* Tokyo.

Neumania (Neumania) tokyoensis Imamura 1959 [Tôkyô-nisekaidani]

Neumania (Neumania) tokyoensis Imamura 1959c, p. 430, figs. 3–4; Imamura 1959a, p. 64; Imamura 1977c, p. 27, fig. 2(12); Imamura 1979a, p. 158.

Neumania tokyoensis: Imamura 1965b, p. 241.

Type locality. Myojin, Hachioji, Tokyo, Japan. *Distribution*. Tokyo.

Neumania (Neumania) uchidai Imamura 1951 [Uchida-nisekaidani]

Neumania uchidai Imamura 1951d, p. 278, figs. 9–17; Imamura 1952a, p. 191.

Neumania (Neumania) uchidai: Imamura 1954b, p. 89; Imamura 1980, p. 355, fig. 165D.

Type locality. Tokiwa Park, Asahigawa, Hokkaido, Japan.

Distribution. Hokkaido.

Subfamily **Uninonicolinae** Oudemans 1909 [Kaidani-aka]

Genus *Unionicola* Haldeman 1842 [Kaidani-zoku]

Unionicola (Parasitatax) arcuata (Wolcott 1898) [Yumi-kaidani (new name)]

Atax arcuata Wolcott 1898, p. 284, fig. 5.

Unionicola (Unionicola) arcuata: Imamura 1953c, p. 447, fig. 22.

Unionicola (Parasitatax) arcuata: Viets & Plate 1954, p. 487. *Type locality*. Charlevoix & Grand Rapids, Michigan, USA. *Distribution*. Gifu.

Unionicola (Parasitatax) uchidai Imamura 1953 [Uchida-kaidani]

Unionicola (Unionicola) uchidai Imamura 1953c, p. 450, figs. 23–24; Imamura 1954b, p. 87, fig. 51.

Unionicola (Parasitatax) uchidai: Viets 1956, p. 367; Imamura 1980, p. 355, fig. 165A.

Unionicola uchidai: Imamura 1965b, p. 240; Imamura 1986, p. 384.

Type locality. Shiroyama, Kaizu, Gifu, Japan. *Distribution*. Hokakido, Gifu.

Unionicola (Parasitatax) ypsilophora (Bonz 1783) [Kaidani]

Acarus ypsilophora Bonz 1783, p. 52, figs. 1-4.

Unionicola (Polyatax) ypsilophora: Uchida 1938, p. 2; Uchida 1939, p. 450.

Unionicola ypsilophora: Imamura 1952a, p. 191; Imamura 1965b, p. 227, fig. 11(12); Imamura 1986, p. 384.

Unionicola (Parasitatax) ypsilophora: Viets 1956, p. 367; Imamura 1965c, p. 406; Mori & Miura 1980, p. 25.

Type locality. Germany.

Distribution. Hokkaido, Tokyo, Shiga, Osaka.

Unionicola (Pentatax) imamurai Hevers 1978 [Ishigaidani]

Unionicola (Pentatax) imamurai Hevers 1978, p. 66, fig. 36;
Mori & Miura 1980, p. 25; Imamura 1980, p. 353, fig. 164D.
Unionicola (Pentatax) bonzi: Imamura 1953c, p. 441, fig. 19.
Type locality. Shimohaguri, Hajima, Gifu, Japan.
Distribution. Gifu, Shiga.

Unionicola (Polyatax) japonensis Viets 1933 [Tanishidani]

Unionicola (Polyatax) japonensis Viets 1933, p. 265, figs. 5-7;
Uchida 1938, p. 2; Uchida 1939, p. 451; Imamura 1951c, p. 31, fig. 1; Imamura 1953c, p. 447; Imamura 1953d, p. 264, fig. 2; Imamura 1980, p. 353, fig. 164C.

Unionicola japonensis: Imamura 1965b, p. 240; Imamura 1986, p. 384, fig. 20 (13).

Type locality. Kichijoji, Tokyo, Japan.

Distribution. Hokkaido, Tokyo, Gifu, Osaka, Hyogo.

Unionicola (Unionicola) crassipes crassipes (Müller 1776) [Ashinagamizudani]

Hydrachna crassipes Müller 1776, p. 189.

Atax crassipes: Uchida 1936c, p. 1679.

Unionicola (Hexatax) crassipes: Uchida 1938, p. 2; Uchida 1939, p. 450; Imamura 1952d, p. 159, fig. 7; Imamura 1953b, p. 232; Imamura 1954b, p. 88.

Unionicola (Unionicola) crassipes crassipes: Viets 1956, p. 353; Imamura 1980, p. 353, fig. 164B.

Unionicola (Unionicola) crassipes: Imamura 1965c, p. 406. *Type locality*. Denmark.

Distribution. Hokkaido, Tokyo, Osaka, Hiroshima, Saga.

Unionicola (Unionicola) crassipes minor (Soar 1900) [Kokaidani]

Atax crassipes minor Soar 1900, p. 364.

Unionicola (Unionicola) crassipes minor: Láska 1951, p. 198, fig. 8b.

Unionicola (Hexatax) crassipes minor: Imamura 1953c, p. 446, fig. 21.

Unionicola crassipes minor: Imamura 1965b, p. 241, fig. 11 (30).

Type locality. England. *Distribution*. Gifu.

Unionicola (Unionicola) crassipes miyazakii

Imamura 1953

[Miyazaki-kaidani (new name)]

Unionicola (Hexatax) crassipes var. miyazakii Imamura 1953c, p. 444, fig. 20.

Unionicola (Unionicola) crassipes miyazakii: Viets 1956, p. 355. *Unionicola miyazakii*: Hevers 1984, p. 267.

Type locality. Ibi River, Ishizu, Kaizu, Gifu, Japan. Distribution. Gifu.

Unionicola (Unionicola) niigata Imamura 1954 [Niigata-kaidani (new name)]

Unionicola (Hexatax) niigata Imamura 1954c, p. 152, fig. 3. *Unionicola (Unionicola) niigata*: Viets 1956, p. 357. *Unionicola niigata*: Hevers 1984, p. 270.

Type locality. Kakizaki, Nakakubiki, Niigata, Japan. Distribution. Niigata.

Remarks. Viets (1956, 1987) noted that this species should probably be synonymized with *U. (U.) crassipes* (Müller 1776).

Unionicola (Unionicola) ovalis Imamura 1954 [Maru-kaidani (new name)]

Unionicola (Hexatax) ovalis Imamura 1954c, p. 154, fig. 4. Unionicola (Unionicola) ovalis: Viets 1956, p. 357.

Type locality. Kakizaki, Nakakubiki, Niigata, Japan. Distribution. Niigata.

Remarks. Viets (1956, 1987) supposed that this species was synonymized with *U. (U.) crassipes* (Müller 1776).

Unionicola (Vietsatax) parasitica (Uchida & Imamura 1940)

[Tokotan-kaidani]

Vietsatax parasiticum Imamura 1938, p. 462, figs. 1–12 [nom. nud.]; Uchida & Imamura 1940, p. 239, figs. 1–9; Viets 1949,

p. 307.

Unionicola (Vietsatax) parasitica: Viets 1954, p. 475; Imamura 1954b, p. 88.

Unionicola parasitica: Imamura 1965b, p. 221, fig. 11(6).Unionicola (Vietsatax) parasiticum: Imamura 1986, p. 384.Type locality. Tokotan, Akkeshi, Hokkaido, Japan.

Distribution. Hokkaido.

Superfamily **Arrenuroidea** Thor 1900 [Yoroimizudani-jôka]

Family **Arrenuridae** Thor 1900 [Yoroimizudani-ka]

Subfamily **Arrenurinae** Thor 1900 [Yoroimizudani-aka]

Genus *Arrenurus* Duges 1834 [Yoroimizudani-zoku]

Arrenurus (Arrenurus) agrionicolus Uchida 1937 [Ike-yoroimizudani]

Arrhenurus [laps.] agrionicolus Uchida 1937, p. 26, figs. 14–16. Arrenurus (Arrenurus) agrionicolus: Imamura 1953b, p. 248, figs. 33–34; Imamura 1956a, p. 25; Imamura 1958b, p. 58, fig. 3; Imamura & Mitchell 1967b, p. 32, figs. 3–4; Imamura 1980, p. 377, fig. 176B.

Arrenurus agrionicolus: Mori & Miura 1980, p. 26; Imamura 1986, p. 392, fig. 20(17).

Type locality. Yatsushiro, Kumamoto, Japan.

Distribution. Ibaraki, Shiga, Hiroshima, Kochi, Kumamoto.

Arrenurus (Arrenurus) asiaticus Marshall 1919 [Yoroimizudani]

Arrenurus asiaticus Marshall 1919, p. 276, plate 29, figs. 8–10. *Arrenurus tectus* Uchida 1922, p. 893, figs. 1–8.

Arrhenurus [laps.] asiaticus: Uchida 1938, p. 3; Uchida 1939, p. 451.

Arrenurus (Arrenurus) asiaticus: Viets 1956, p. 550; Imamura 1965c, p. 410.

Type locality. Suzhou, China. Distribution. Tokyo, Osaka.

Arrenurus (Arrenurus) daisetsuensis Imamura 1951 [Daisetsu-yoroimizudani]

Arrenurus (Arrenurus) daisetsuensis Imamura 1950c, p. 1, figs. 1–8 [nom. nud.]; Imamura 1951a, p. 106, figs. 1–17; Imamura 1954b, p. 132.

Arrenurus daisetsuensis: Imamura 1965b, p. 223, fig. 11(8)

Type locality. Numanodaira & Hisagonuma, Mt. Daisetsu, Hokkaido, Japan.

Distribution. Hokkaido.

Arrenurus (Arrenurus) hadai Imamura 1953 [Hada-yoroimizudani]

Arrenurus (Arrenurus) hadai Imamura 1953b, p. 256, fig. 38; Imamura 1953d, p. 274, fig. 7; Imamura 1954c, p. 164; Imamura 1980, p. 377, fig. 176D.

Arrenurus hadai: Imamura 1965b, p. 248, fig. 11(41).

Type locality. Oasa, Yamagata, Hiroshima, Japan.

Distribution. Niigata, Hyogo, Hiroshima.

Arrenurus (Arrenurus) japonicus Uchida & Imamura 1952 [Nippon-yoroimizudani]

Arrhenurus [laps.] japonicus: Uchida 1938, p. 3[nom. nud.]. Arrenurus (Arrenurus) japonicus Imamura (partly Uchida & Imamura) 1952d, p. 160, figs. 8–9; Imamura 1953b, p. 251; Imamura 1953d, p. 273; Imamura 1954b, p. 133, fig. 80; Imamura 1980, p. 377, fig. 176C.

Arrenurus japonicus: Imamura 1965b, p. 222, fig. 11(7).

Type locality. Yamaguchi, Saga, Japan.

Distribution. Hokkaido, Tokyo, Gifu, Hiroshima, Hyogo, Saga.

Remarks. This species name was referred to a species list by Uchida (1938) prior to the original description in Imamura (1952d).

Arrenurus (Arrenurus) mitoensis Imamura & Mitchell 1967

[Mito-yoroimizudani]

Arrenurus (Arrenurus) latipetiolatus: Imamura 1952d, p. 163, fig. 10.

Arrenurus (Arrenurus) mitoensis Imamura & Mitchell 1967b, p. 29, figs. 1–2; Imamura 1980, p. 379, fig. 177A.

Type locality. Senba Lake, Mito, Ibaraki, Japan. Distribution. Ibaraki, Kumamoto.

Arrenurus (Arrenurus) petiospinus Imamura 1953 [Toge-yoroimizudani (new name)]

Arrenurus (Arrenurus) petiospinus Imamura 1953b, p. 252, figs. 35–37.

Type locality. Kumano, Hiroshima, Japan. *Distribution*. Hiroshima.

Arrenurus (Arrenurus) uchidai Imamura 1952 [Uchida-yoroimizudani (new name)]

Arrenurus (Arrenurus) uchidai Imamura 1952c, p. 447, figs. 1–9; Imamura 1954b, p. 134, fig. 81.

Type locality. Toyokoro, Tokachi, Hokkaido, Japan. *Distribution*. Hokkaido.

Arrenurus (Megaluracarus) globator globator (Müller 1776)

[Ôyoroimizudani]

Hydrachna globator Müller 1776, p. 188.

Arrenurus (Megaluracarus) globator: Imamura 1954b, p. 136, figs. 82-83; Imamura 1965c, p. 411.

Arrenurus (Megaluracarus) globator globator: Viets 1956, p. 586; Imamura 1980, p. 379, fig. 177B.

Type locality. Denmark.

Distribution. Hokkaido.

Arrenurus (Micruracarus) madaraszi Daday 1898 [Hime-yoroimizudani]

Arrenurus madaraszi Daday 1898, p. 97; Imamura & Kikuchi 1986, p. 324.

Arrhenurus [laps.] madaraszi: Miyazaki 1935, p. 725, figs. 1–7;
Miyazaki 1936, p. 306, figs. 1–8; Uchida & Miyazaki 1935, p. 73, fig. 1; Uchida 1937, p. 26; Uchida 1938, p. 3; Uchida 1939, p. 451.

Arrenurus (Micruracarus) madaraszi: Viets 1935, p. 20, figs. 125-126; Imamura 1953b, p. 259; Imamura 1953c, p. 470; Imamura 1953d, p. 275, fig. 8; Imamura 1954c, p. 164; Imamura 1956a, p. 25; Imamura 1961a, p. 57; Imamura 1965c, p. 411; Imamura 1980, p. 379, fig. 177D.

Arrenurus madaraszi: Imamura 1965b, p. 223, fig. 11(8); Imamura 1986, p. 392, fig. 20(17).

Type locality. Sri Lanka.

Distribution. Niigata, Ibaraki, Tokyo, Gifu, Osaka, Hyogo, Hiroshima, Saga, Kumamoto, Kagoshima.

Arrenurus (Micruracarus) sagaensis Imamura 1952 [Saga-yoroimizudani (new name)]

Arrenurus (Uchidacarus) sagaensis Imamura 1952d, p. 165, fig. 11

Arrenurus (Micruracarus) sagaensis: Vites 1956, p. 615.

Type locality. Yamaguchi, Saga, Japan. Distribution. Saga.

Arrenurus (Micruracarus) soochowensis Marshall 1921 [Sûchô-voroimizudani]

Arrenurus soochowensis Marshall 1921, p. 171, figs. 22–25; Imamura 1953a, p. 343, figs. 1–2; Imamura 1986, p. 393, fig. 20 (18).

Arrenurus (Micruracarus) soochowensis: Imamura 1952d, p. 166; Imamura 1954b, p. 140, figs. 84–85; Imamura 1980, p. 379, fig. 177C.

Type locality. Suzhou, China. Distribution. Hokkaido, Fukuoka.

Family **Athienemanniidae** Viets 1922 [Chinemamizudani-ka (new name)]

Subfamily **Athienemanniinae** Viets 1922 [Chinemamizudani-aka (new name)]

Genus *Chelomideopsis* Romijn 1920 [Himetamamizudani-zoku (new name)]

Chelomideopsis annemiae japonensis Imamura 1983 [Anemi-himetamamizudani (new name)]

Chelomideopsis schermeri japonensis Imamura 1983, p. 56, fig. 2.

Chelomideopsis annemiae japonensis: Viets 1987, p. 992.

Type locality. Koto River, Gozen-yama, Higashi-ibaraki, Ibaraki, Japan.

Distribution. Ibaraki.

Remarks. This species epithet *schermeri* in the original description should be emended to *annemiae* (T. Imamura, pers. comm.)

Family **Chappuisididae** Motas & Tanasachi 1946 [Shapuidani-ka]

Subfamily **Chappuisidinae** Motas & Tanasachi 1946 [Shapuidani-aka]

Genus *Chappuisides* Szalay 1943 [Shapuidani-zoku (new name)]

Chappuisides (Neochappuisides) japonicus Imamura 1979 [Nihon-shapuidani (new name)]

Chappuisides (Neochappuisides) japonicus Imamura 1979b, p. 258, figs. 1–5.

Type locality. Bansho River, Koda, Yayoi, Minamiamabe, Oita, Japan.

Distribution. Oita.

Subfamily **Tsushimacarinae** Cook 1974 [Tsushimadani-aka]

Genus *Tsushimacarus* Imamura 1970 [Tsushimadani-zoku]

Tsushimacarus uenoi Imamura 1970 [Tsushimadani]

Tsushimacarus uenoi Imamura 1970a, p. 256, fig. 6; Imamura 1977c, p. 75, fig. 2(79); Imamura 1979a, p. 160; Imamura 1980, p. 375, fig. 175D.

Type locality. Miyama, Sago, Kami-agata, Kami-shima, Tsushima, Nagasaki, Japan.

Distribution. Nagasaki.

Family **Hungarohydracaridae** Motas & Tanasachi 1959 [Miyamamizudani-ka (revised name)]

Subfamily **Hungarohydracarinae** Motas & Tanasachi 1959

[Miyamamizudani-aka (revised name)]

Genus *Bharatohydracarus* Cook 1967 [Niseyoroidani-zoku]

Bharatohydracarus japonicus (Imamura 1957) [Niseyoroidani]

Balcanohydracarus japonicus Imamura 1957a, p. 387, fig. 34; Imamura 1959a, p. 65; Imamura 1965b, p. 248, fig. 11(40); Imamura 1965c, p. 410.

Balcanohydracarus latus Imamura 1959c, p. 448, figs. 16–17; Imamura 1959a, p. 65; Imamura 1965b, p. 248.

Bharatohydracarus japonicus: Cook 1967, p. 206; Imamura 1970a, p. 260, fig. 8; Imamura 1977c, p. 77, fig. 2(80); Imamura 1979a, p. 160; Imamura 1980, p. 377, fig. 176A. *Type locality*. Funakoshi, Mikawa, Shiso, Hyogo, Japan. *Distribution*. Tokyo, Hyogo, Nagasaki.

Family **Kantacaridae** Imamura 1959 [Kantôdani-ka]

Subfamily **Kantacarinae** Imamura 1959 [Kantôdani-aka]

Genus *Kantacarus* Imamura 1959 [Kantôdani-zoku]

Kantacarus matsumotoi Imamura 1959 [Kantôdani]

Kantacarus matsumotoi Imamura 1959c, p. 440, fig. 10; Imamura 1959a, p. 65; Imamura 1965b, p. 246, fig. 11(38); Imamura 1965c, p. 409; Imamura 1977c, p. 72, fig. 2(75); Imamura 1979a, p. 160; Imamura 1980, p. 375, fig. 175B; Imamura 1986, p. 389.

Type locality. Myojin, Hachioji, Tokyo, Japan. *Distribution*. Tokyo.

Family **Mideopsidae** Koenike 1910 [Tamamizudani-ka]

Subfamily **Mideopsinae** Koenike 1910 [Tamamizudani-aka]

Genus *Mideopsis* Neuman 1880 [Tamamizudani-zoku]

Mideopsis (Mideopsis) ryugaensis Imamura 1957 [Ryuga-tamamizudani (new name)]

Mideopsis ryugaensis Imamura 1957a, p. 385, fig. 32.Mideopsis (Mideopsis) ryugaensis: Cook 1976, p. 106.Type locality. Ryugado Cave, Kochi, Japan.Distribution. Kochi.

Mideopsis (Nudomideopsis) asagoensis Imamura 1962 [Asago-tamamizudani]

Mideopsis (Nudomideopsis) asagoensis Imamura 1962, p. 258, fig. 6; Imamura 1977c, p. 54, fig. 2(48); Imamura 1979a, p. 159.

Type locality. Wadayama, Hyogo, Japan. *Distribution.* Hyogo.

Mideopsis (Nudomideopsis) azaiensis Imamura 1958 [Azai-tamamizudani]

Mideopsis (Nudomideopsis) azaiensis Imamura 1958a, p. 456, fig. 9; Imamura 1959a, p. 65; Imamura 1977c, p. 54, fig. 2 (49); Imamura 1979a, p. 159.

Type locality. Shimo-azai, Hokubo, Okayama, Japan. *Distribution*. Okayama.

Mideopsis (Nudomideopsis) brevipalpis Imamura 1970 [Kohige-tamamizudani]

Mideopsis (Nudomideopsis) brevipalpis Imamura 1970a, p. 253, fig. 2; Imamura 1977c, p. 54, fig. 2(50); Imamura 1979a, p. 159.

Type locality. Tendoshige, Izuhara, Shimo-shima, Tsushima, Nagasaki, Japan.

Distribution. Nagasaki.

Mideopsis (Nudomideopsis) crassipalpis Imamura 1970 [Higebuto-tamamizudani]

Mideopsis (Nudomideopsis) crassipalpis Imamura 1970a, p. 254, fig. 3; Imamura 1977c, p. 56, fig. 2(51); Imamura 1979a, p. 159.

Type locality. Miyama, Sago, Kami-agata, Kami-shima, Tsushima, Nagasaki, Japan.

Distribution. Nagasaki.

Mideopsis (Nudomideopsis) elliptica (Imamura 1956) [Tamamizudani]

Miuracarus ellipticus Imamura 1956b, p. 213, fig. 18.

Mideopsis (Nudomideopsis) elliptica: Imamura 1959a, p. 65;
Imamura 1977c, p. 56, fig. 2(52); Imamura 1979a, p. 159.

Type locality. Aioi, Hyogo, Japan.

Distribution. Hyogo.

Mideopsis (Nudomideopsis) kanazawaensis Imamura 1958 [Kanazawa-tamamizudani]

Mideopsis (Nudomideopsis) kanazawaensis Imamura 1958a, p.

459, figs. 12-13; Imamura 1959a, p. 65; Imamura 1977c, p. 56, fig. 2(53); Imamura 1979a, p. 159.

Mideopsis kanazawaensis: Imamura 1965b, p. 245, fig. 11

Type locality. Kawara-machi, Kanazawa, Ishikawa, Japan.

Distribution. Ishikawa.

Mideopsis (Nudomideopsis) kotiensis Imamura 1962 [Kôchi-tamamizudani]

Mideopsis (Nudomideopsis) kotiensis Imamura 1962, p. 255, fig. 3; Imamura 1977c, p. 57, fig. 2(54); Imamura 1979a, p. 159.

Type locality. Jinzenji, Kochi City, Kochi, Japan. *Distribution*. Kochi.

Mideopsis (Nudomideopsis) kyotoensis Imamura 1958 [Kyôto-tamamizudani]

Mideopsis (Nudomideopsis) kyotoensis Imamura 1958a, p. 454, fig. 6; Imamura 1959a, p. 65; Imamura 1977c, p. 58, fig. 2 (55); Imamura 1979a, p. 159.

Type locality. Miyazaki, Shimogamo, Kyoto, Japan. *Distribution*. Kyoto.

Mideopsis (Nudomideopsis) mitoensis Imamura 1958 [Mito-tamamizudani]

Mideopsis (Nudomideopsis) mitoensis Imamura 1958a, p. 452, figs. 4–5; Imamura 1959c, p. 440; Imamura 1959a, p. 65; Imamura 1977c, p. 59, fig. 2(56); Imamura 1979a, p. 159; Imamura 1980, p. 371, fig. 173D.

Mideopsis mitoensis: Imamura 1986, p. 390, fig. 20(15). Type locality. Higashi-hara, Mito, Ibaraki, Japan. Distribution. Tokyo, Ibaraki.

Mideopsis (Nudomideopsis) miurai Imamura 1957 [Miura-tamamizudani]

Mideopsis miurai Imamura 1957a, p. 381, fig. 27.

Mideopsis (Nudomideopsis) miurai: Imamura 1959a, p. 65;
Imamura 1977c, p. 59, fig. 2(57); Imamura 1979a, p. 159.

Type locality. Himeji, Hyogo, Japan.

Distribution. Hyogo.

Mideopsis (Nudomideopsis) morimotoi Imamura 1957 [Morimoto-tamamizudani]

Mideopsis morimotoi Imamura 1957a, p. 382, fig. 28.

Mideopsis (Nudomideopsis) morimotoi: Imamura 1958a, p. 455, fig. 8; Imamura 1959c, p. 440; Imamura 1959a, p. 65; Imamura 1965c, p. 409; Imamura 1977c, p. 59, fig. 2(58); Imamura 1979a, p. 159.

Type locality. Asakawa, Tokyo, Japan. *Distribution.* Tokyo, Gunma.

Mideopsis (Nudomideopsis) odatensis Imamura 1962 [Ôdate-tamamizudani]

Mideopsis (Nudomideopsis) odatensis Imamura 1962, p. 256, fig. 4; Imamura 1977c, p. 59, fig. 2(59); Imamura 1979a, p. 159.

Type locality. Odate, Akita, Japan. Distribution. Akita.

Mideopsis (Nudomideopsis) okayamaensis Imamura 1958 [Okayama-tamamizudani]

Mideopsis (Nudomideopsis) okayamaensis Imamura 1958a, p. 457, fig. 10; Imamura 1959a, p. 65; Imamura 1977c, p. 59, fig. 2(60); Imamura 1979a, p. 159.

Type locality. Shimo-azai, Hokubo, Okayama, Japan. *Distribution*. Okayama.

Mideopsis (Nudomideopsis) papillosa Imamura 1957 [Uroko-tamamizudani]

Mideopsis papillosa Imamura 1957a, p. 383, figs. 29–30; Imamura 1965b, p. 245; Imamura 1986, p. 389.

Mideopsis (Nudomideopsis) papillosa: Imamura 1959a, p. 65; Imamura 1977c, p. 59, fig. 2(61); Imamura 1979a, p. 159; Imamura 1980, p. 373, fig. 174B.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo.

Mideopsis (Nudomideopsis) rundiformis Imamura 1957 [Maru-tamamizudani]

Mideopsis rundiformis Imamura 1957a, p. 384, fig. 31.

Mideopsis (Nudomideopsis) rundiformis: Imamura 1959a, p. 65;
Imamura 1977c, p. 62, fig. 2(62); Imamura 1979a, p. 159.

Type locality. Funakoshi, Mikawa, Shiso, Hyogo, Japan.

Distribution. Hyogo.

Mideopsis (Nudomideopsis) takefuensis Imamura 1958 [Takefu-tamamizudani]

Mideopsis (Nudomideopsis) takefuensis Imamura 1958a, p. 458, fig. 11; Imamura 1959a, p. 65; Imamura 1977c, p. 63, fig. 2 (63); Imamura 1979a, p. 159.

Type locality. Kita-azuma, Takefu, Fukui, Japan. Distribution. Fukui.

Mideopsis (Nudomideopsis) tsushimaensis Imamura 1970 [Tsushima-tamamizudani]

Mideopsis (Nudomideopsis) tsushimaensis Imamura 1970a, p. 255, figs. 4–5; Imamura 1977c, p. 64, fig. 2(64); Imamura 1979a, p. 159; Imamura 1980, p. 373, fig. 174A.

Type locality. Miyama, Sago, Kami-agata, Kami-shima, Tsushima, Nagasaki, Japan.

Distribution. Nagasaki.

Mideopsis (Nudomideopsis) uenoi Imamura 1958 [Ueno-tamamizudani]

Mideopsis (Nudomideopsis) uenoi Imamura 1958a, p. 454, fig. 7; Imamura 1959a, p. 65; Imamura 1977c, p. 64, fig. 2(65); Imamura 1979a, p. 159.

Type locality. Jinzenji, Kochi City, Kochi, Japan. Distribution. Kochi.

Mideopsis (Nudomideopsis) yokotai Imamura 1962 [Yokota-tamamizudani]

Mideopsis (Nudomideopsis) yokotai Imamura 1962, p. 257, fig. 5; Imamura 1977c, p. 64, fig. 2(66); Imamura 1979a, p. 159.

Type locality. Sagawa, Kochi, Japan. Distribution. Kochi.

Subfamily **Morimotacarinae** Imamura 1962 [Morimotomizudani-aka]

Genus *Morimotacarus* Imamura 1962 [Morimotomizudani-zoku]

Morimotacarus wadayamensis Imamura 1962 [Morimotomizudani]

Morimotacarus wadayamensis Imamura 1962, p. 260, fig. 7; Imamura 1965c, p. 409; Imamura 1977c, p. 71, fig. 2(74); Imamura 1979a, p. 160; Imamura 1980, p. 375, fig. 175A. Type locality. Wadayama, Asago, Hyogo, Japan. Distribution. Hyogo.

Subfamily **Uchidastygacarinae** Imamura 1956 [Uchidamizudani-aka]

Genus *Uchidastygacarus* Imamura 1956 [Uchidamizudani-zoku]

Uchidastygacarus (Imamurastygacarus) minutus Imamura 1956

[Hime-uchidamizudani (new name)]

Uchidastygocarus [laps.] minutus Imamura 1956b, p. 211, fig. 17.

Uchidastveacarus minutus: Imamura 1959a, p. 65.

Uchidastygacarus (Imamurastygacarus) minutus: Cook 1974, p. 465; Imamura 1977c, p. 70, fig. 2(73); Imamura 1979a, p. 159.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo.

Uchidastygacarus (Uchidastygacarus) akitaensis Imamura 1962

[Akita-chikamizudani]

Uchidastygacarus akitaensis Imamura 1962, p. 254, fig. 2; Imamura 1986, p. 391, fig. 20(16).

Uchidastygacarus (Uchidastygacarus) akitaensis: Imamura 1977c, p. 66, fig. 2(68); Imamura 1979a, p. 159.

Type locality. Onari, Odate, Akita, Japan.

Distribution. Akita.

Uchidastygacarus (Uchidastygacarus) akiyoshiensis Imamura 1959

[Akiyoshi-chikamizudani]

Uchidastygacarus akiyoshiensis Imamura 1959b, p. 251, fig. 1; Imamura 1959a, p. 65; Imamura 1970a, p. 259, fig. 7.

Uchidastygacarus (Uchidastygacarus) akiyoshiensis: Imamura 1977c, p. 68, fig. 2(70); Imamura 1979a, p. 159; Imamura 1980, p. 373, fig. 174D.

Type locality. Taishodo Cave, Sayama, Mito, Akiyoshi, Yamaguchi, Japan.

Distribution. Yamaguchi, Nagasaki.

Uchidastygacarus (Uchidastygacarus) palmifer Imamura 1959

[Uchidamizudani]

Uchidastygacarus (Uchidastygacarus) palmifer Imamura 1959c, p. 446, figs. 13–15; Imamura 1977c, p. 68, fig. 2(69); Imamura 1979a, p. 159; Imamura 1980, p. 373, fig. 174C.

Uchidastygacarus palmifer: Imamura 1959a, p. 65; Imamura 1965b, p. 246, fig. 11(37); Imamura 1965c, p. 410.

Type locality. Myojin, Hachioji, Tokyo, Japan. Distribution. Tokyo.

Uchidastygacarus (Uchidastygacarus) rotundus Imamura 1956

[Uchida-marudani]

Uchidastygocarus [laps.] *rotundus* Imamura 1956b, p. 209, figs. 15–16; Imamura 1957a, p. 380.

Uchidastygacarus rotundus: Imamura 1959a, p. 65.

Uchidastygacarus (Uchidastygacarus) rotundus: Imamura 1977c, p. 69, fig. 2(72); Imamura 1979a, p. 159.

Type locality. Aioi, Hyogo, Japan.

Distribution. Hyogo.

Uchidastygacarus (Uchidastygacarus) ryukyuensis Imamura 1961

[Ryûkyû-chikamizudani]

Uchidastygacarus ryukyuensis: Imamura 1959a, p. 65 [nom. nud.].

Uchidastygacarus (Uchidastygacarus) ryukyuensis Imamura 1961a, p. 56, fig. 6; Imamura 1977c, p. 68, fig. 2(71);

Imamura 1979a, p. 159.

Type locality. Komata, Naze, Amami-oshima, Kagoshima, Japan.

Distribution. Kagoshima.

Family **Momoniidae** Viets 1926 [Momodani-ka]

Subfamily **Stygomomoniinae** Motas & Tanasachi 1946 [Chikamomodani-aka]

Genus *Stygomomonia* Szalay 1943 [Chikamomodani-zoku]

Stygomomonia (Allomomonia) kantoensis Imamura 1959 [Kantômomodani]

Stygomomonia kantoensis Imamura 1959c, p. 437, fig. 8; Imamura 1959a, p. 65; Imamura 1965b, p. 245; Imamura 1979a, p. 159.

Stygomomonia (Allomomonia) kantoensis: Imamura 1977c, p. 51, fig. 2(47).

Type locality. Myojin, Hachioji, Tokyo, Japan. *Distribution*. Hokkaido, Tokyo.

Stygomomonia (Stygomomonia) hachiojiensis Imamura 1959 [Chikamomodani]

Stygomomonia (Stygomomonia) hachiojiensis Imamura 1959c, p. 434, figs. 6–7; Imamura 1959a, p. 65; Imamura 1977c, p. 50, fig. 2(43–44); Imamura 1980, p. 371, fig. 173C.

Stygomomonia hachiojiensis: Kishida 1960, p. 7, figs. 1–4; Imamura 1965b, p. 245; Imamura 1979a, p. 159.

Type locality. Myojin, Hachioji, Tokyo, Japan. Distribution. Tokyo, Ishikawa.

Stygomomonia (Stygomomonia) rotunda Imamura 1956 [Momodani]

Stygomomonia rotunda Imamura 1956b, p. 208, fig. 14; Imamura 1957a, p. 376, fig. 25; Imamura 1959a, p. 65; Imamura 1959c, p. 438, fig. 9; Imamura 1965b, p. 245, fig. 11(35); Imamura 1965c, p. 409; Imamura 1979a, p. 159; Imamura 1986, p. 388.

Stygomomonia (Stygomomonia) rotunda: Imamura 1977c, p. 50. fig. 2(45–46).

Type locality. Aioi, Hyogo, Japan.

Distribution. Tokyo, Hyogo, Ishikawa.

Family **Nipponacaridae** Imamura 1959 [Nippondani-ka]

Subfamily **Nipponacarinae** Imamura 1959 [Nippondani-aka]

Genus *Nipponacarus* Imamura 1957 [Nippondani-zoku]

Nipponacarus (Hexanipponacarus) japonicus Imamura 1959 [Nipponmizudani]

Nipponacarus (Hexanipponacarus) japonicus Imamura 1959c, p. 444, fig. 12; Imamura 1959a, p. 65; Imamura 1977c, p. 75, fig. 2(78); Imamura 1979a, p. 160.

Nipponacarus japonicus: Imamura 1965b, p. 247; Imamura 1986, p. 389.

Type locality. Myojin, Hachioji, Tokyo, Japan. *Distribution*. Tokyo.

Nipponacarus (Nipponacarus) matsumotoi Imamura 1959 [Ônippondani]

Nipponacarus (Nipponacarus) matsumotoi Imamura 1959c, p. 443, fig. 11; Imamura 1959a, p. 65; Imamura 1965c, p. 410; Imamura 1977c, p. 73, fig. 2(76); Imamura 1979a, p. 160.

Nipponacarus matsumotoi: Imamura 1965b, p. 247; Imamura 1986, p. 389.

Type locality. Myojin, Hachioji, Tokyo, Japan. *Distribution*. Tokyo.

Nipponacarus (Nipponacarus) miurai Imamura 1957 [Miura-chikadani]

Nipponacarus (Nipponacarus) miurai Imamura 1957a, p. 378, fig. 26; Imamura 1959a, p. 65; Imamura 1977c, p. 74, fig. 2 (77); Imamura 1979a, p. 160; Imamura 1980, p. 375, fig. 175C.

Nipponacarus miurai: Imamura 1965b, p. 246, fig. 11(39); Imamura 1986, p. 389.

Type locality. Aioi, Hyogo, Japan. Distribution. Hyogo.

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